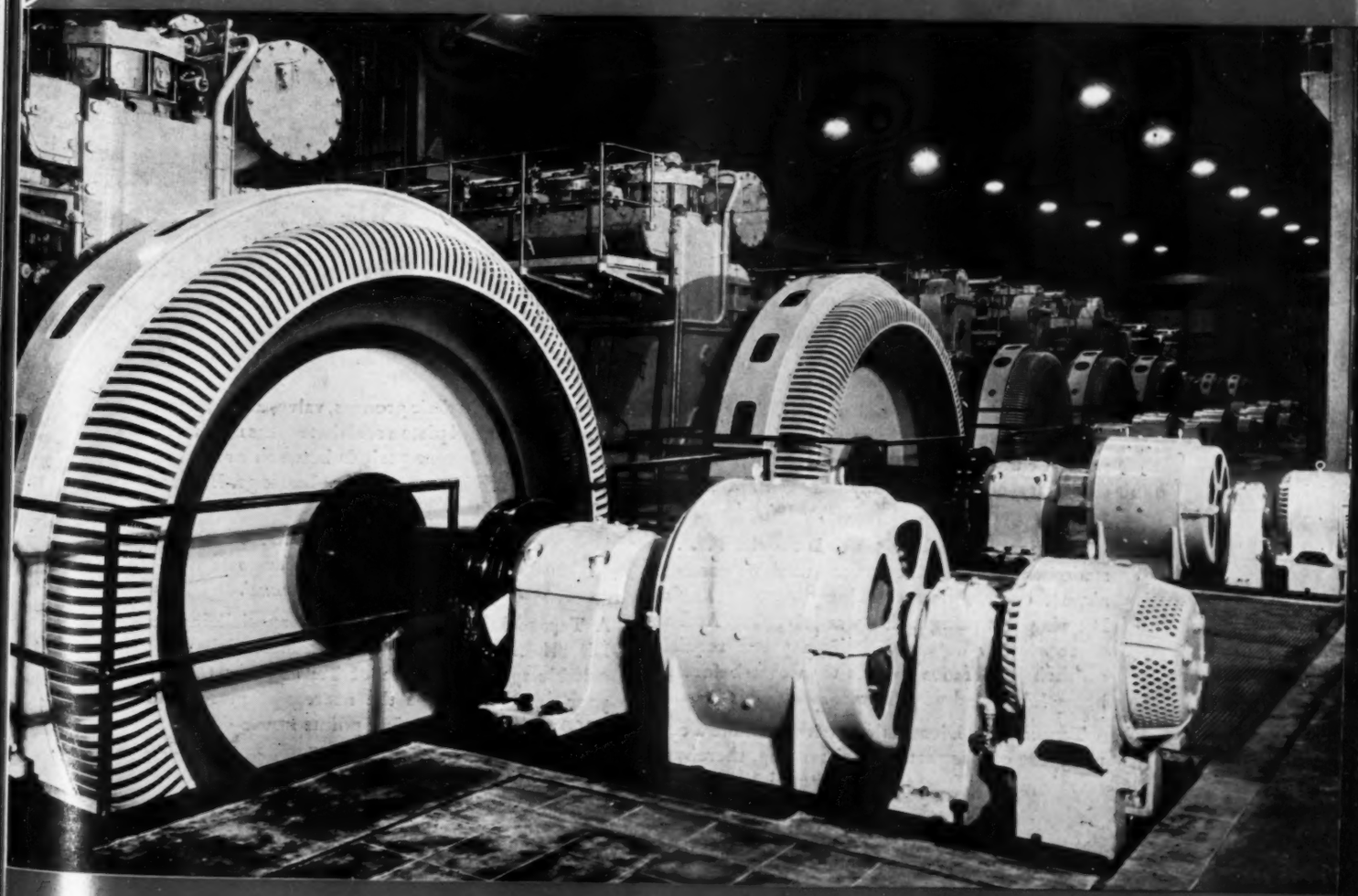
DIESEL PROGRESS



OCTOBER, 1944

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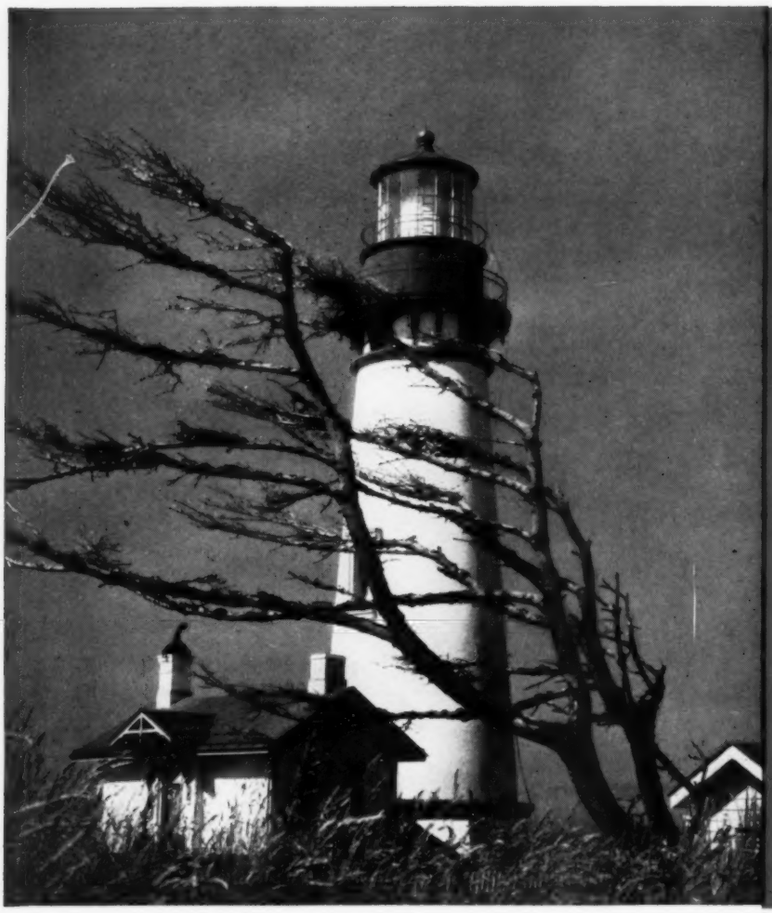

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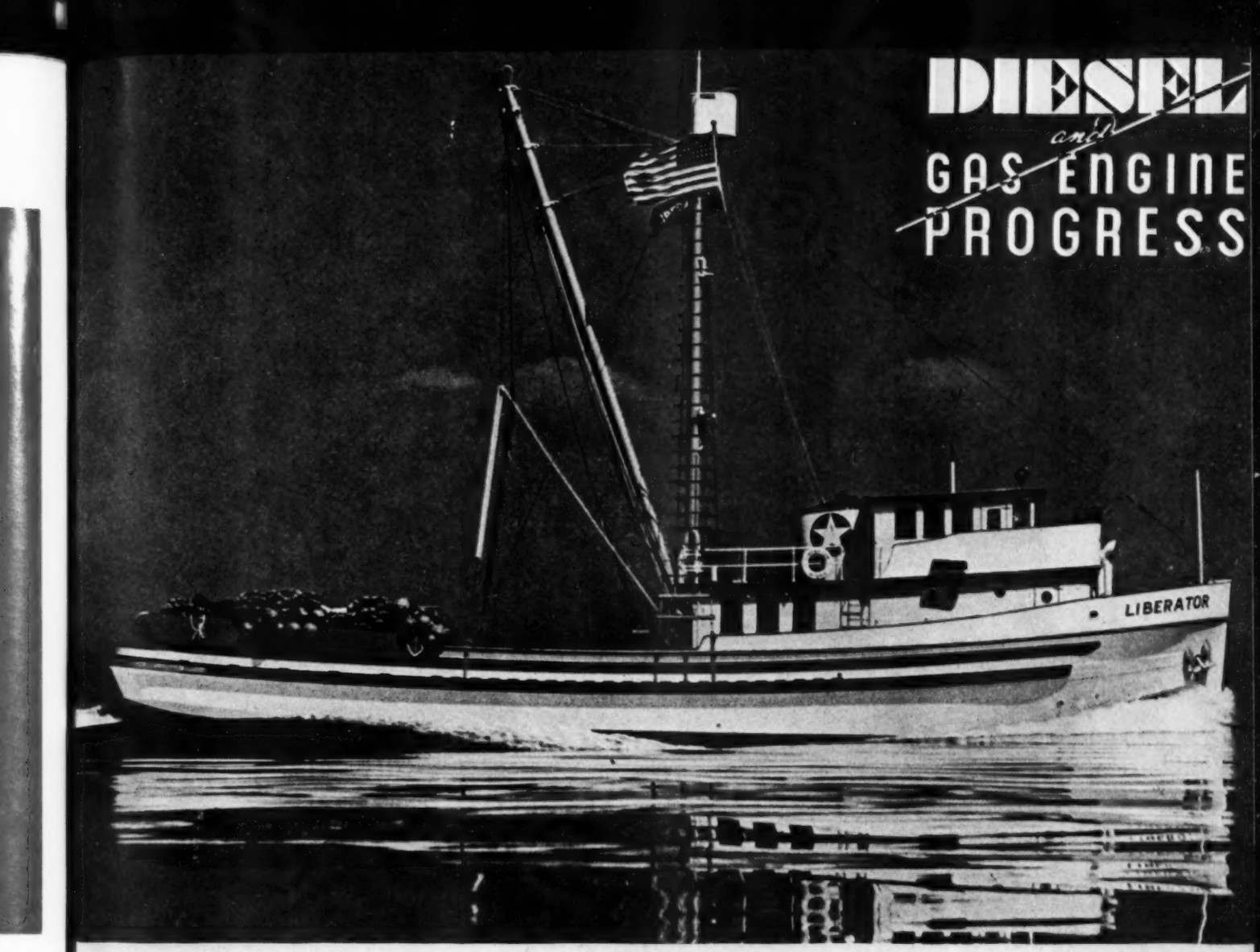
TUNE IN THE TEXACO STAR THEATRE EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

DIESEL PROGRESS, for October, 1944. Volume X, Number 10. DIESEL PROGRESS is published monthly by Diesel Engines, Inc., 2 West Forty-fifth St., New York 19, N. Y. Rex W. Wadman, President. Acceptance under the Act of June 5, 1943, at East Stroudsburg, Pa., authorized March 27, 1940. Subscription rates: $5.00 per year, single copy, 50c.



DIESEL and GAS ENGINE PROGRESS

OCTOBER CONTENTS

DIESEL PROGRESS for October, 1944, Vol. X, No. 10. Published monthly by Diesel Engines, Inc., 2 West 45th Street, New York 19, N. Y. Tel. MUrray Hill 2-7333. Subscription rates are $5.00 for U.S.A. and possessions. All other countries $7.50 per year. Subscriptions may be paid the London office at £1-17s per year.

FRONT COVER ILLUSTRATION: General view of the Brawley, California, Diesel Plant of the Imperial Irrigation District—largest Diesel Plant in the U.S.A. totalling eight Hamilton Diesels of 18,340 aggregate hp.

TABLE OF CONTENTS ILLUSTRATION: The new West Coast Purse Seiner, "Liberator," powered with a Supercharged Enterprise Diesel of six cylinders rated 600 hp.

BRANCH OFFICES

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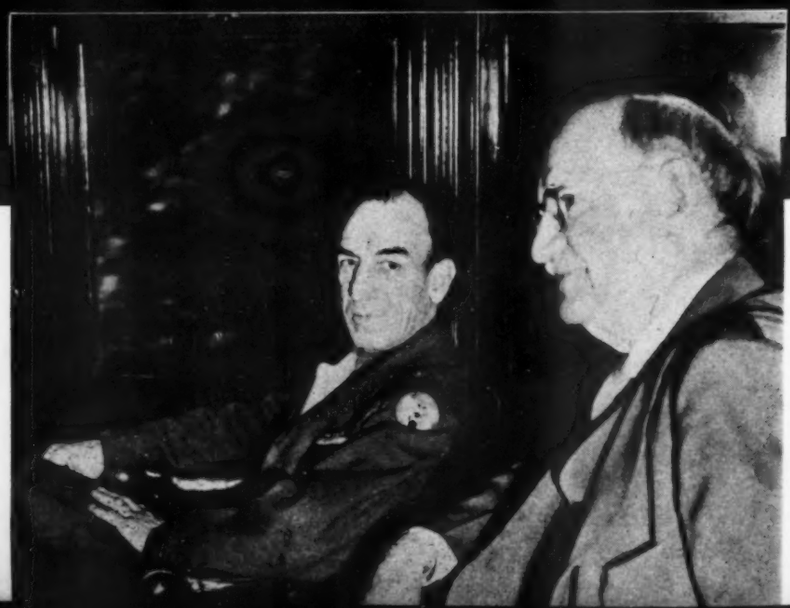
THE ALASKA RAILROAD GOE

Photograph shows south-bound freight train entering the Whittier Tunnel-- the sixth longest tunnel on the North American continent.



Brig. Gen. Frank L. Whittaker, Deputy Commander of the Alaskan Dept., with Col. Otto F. Ohlson, Gen. Mgr., Alaska Railroad, on the first inspection run.

OE IESEL

By WILBUR W. YOUNG

. Otto F. Ohlson, General Manager the Alaska Railroad, former District erintendent of the Northern Pacific.

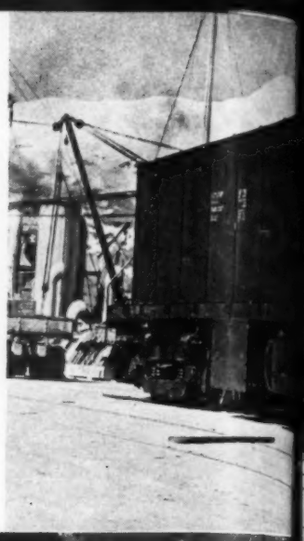
WHITTIER, an Alaskan port so new that it does not appear on any maps of the Territory now available to the public, is the southern terminus of the 62.5 mile Anchorage-Whittier branch of the Alaska Railroad where two 1000 hp., Alco-G.E. Diesel road switchers are now operating on regular schedules. This places Diesel locomotives farther north than they have ever before been operated and on the vital job of moving supplies to U. S. Army bases along the Alaska Railroad which runs through some of the most difficult terrain and under the most severe weather conditions met by any railway on the North American Continent.

For example the 114 miles of railroad between Seward and Anchorage is over rugged terrain with heavy grades in both directions including two summits, one of which is above 1000 ft. elevation; there are seven tunnels and trestles with high degree curvatures. There is a complete loop on one of the mountain grades of 2.2%. With the construction of a port at Whittier and the branch line between Portage and Whittier a cut-off of the extremely difficult Seward-Anchorage line was provided. The total curvature in the new line is 229 degrees as compared with a total of 5871 degrees in the Seward-Portage line. The Whittier cut-off, initiated, located and designed by The Alaska Railroad and sponsored by the War Department because of its stragetic military importance, was constructed by the U. S. Army Engineer Corps, aided by a private construction company. Work started in 1941 and the job was completed in 1943.

Now here is an interesting slant on the vital role Diesel locomotives are playing under the urgency of wartime requirements as well as a prophetic view of where they are destined to fit in railroad planning of the future. Normally it is unlikely that Diesel locomotives ever would have been sent to Alaska simply because there are large coal deposits all along the route of the railway and it just does not seem feasible to transport fuel oil over such great distances when coal is available on the spot. But it was

Diesels entering the Portage Tunnel northbound on the Whittier-Portage cut-off.

Executive personnel of 714th Railway Operating Battalion, left to right: Back row: Lt. I. M. West, Lt. E. M. Enger, Capt. S. B. Smith, Lt. J. J. Burgess, Capt. R. M. Homiston, CWO A. S. Niewenhous, Capt. G. B. Mills, Lt. W. W. Dorwart, WOJG J. W. McManamy. Center row: Lt. R. L. Steinke, Lt. H. H. Stalnaker, Lt. J. L. Banks, Lt. M. D. Ray, Lt. R. C. Hilton, Lt. D. M. Severtson, Lt. J. H. Gardiner, Lt. James McComb. Front row: Capt. L. V. Lee, Capt. C. H. Tillquist, Capt. A. J. Annunziato, Maj. W. F. Hastedt, Lt. Col. H. S. Huron, Capt. P. E. Barlow, Capt. J. A. Robbins, Capt. D. M. Switzer.



Geo. W. Colwell, Ch. Engr. of the Maintenance of-Way on the Alaska Railroad.

decided to use Diesels in the present emergency —first because they would speed up operations due to their general overall availability and secondly — but even more importantly — they would make it unnecessary to install forced ventilating systems in the newly constructed tunnels near Whittier.

Right here is a good place to quote an eminent railroad authority who in ordinary conversation recently let fall this gem! "There is not a job of work to be done on a railroad that Diesels can't do better than steam." And he had no reference to other than Diesel's ability to do a better job of train-mile haulage. But train operation in tunnels is something else; let us see what happens.

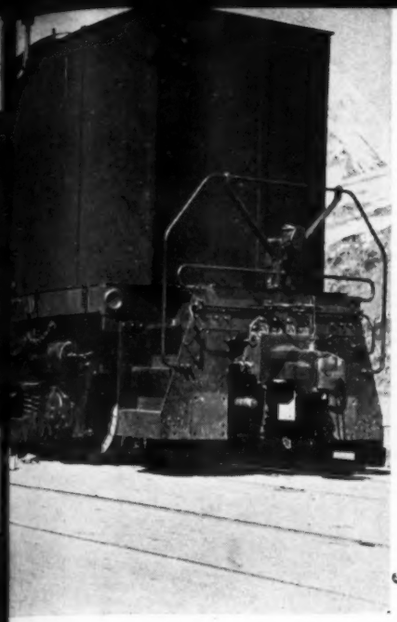
When train operation started on the Whittier cut-off in 1943 it was found that coal-burning locomotives handling fully rated freight trains created so much smoke and gases that the lives of train crews as well as passengers on the mixed passenger and freight trains were jeopardized. Benjamin W. Thoron, Director of the Division of Territories and Island Possessions of the Interior Department said that the tunnels would be unsafe for approximately two hours after passage of a coal-burning locomotive.

During the initial run of the Diesel locomotive officials of the Bureau of Mines made tests for carbon monoxide gas in the Whittier tunnels. They reported carbon monoxide gas present to the extent of only 25 ten-thousands of one per cent. They said there would have to be twenty times as much gas to create a condition considered as unhealthy, and one hundred times as much to be dangerous. Hence it is seen that the Diesel locomotives will maintain more frequent schedules without the slightest hazard to the lives and health of train crews and passengers and at the same time they will eliminate the cost of installing, operating and maintaining elaborate ventilating systems.

It is easy to visualize the magnitude of this tunnel problem when you realize that the longer of the two Whittier tunnels cuts 13,090 feet through the Kenai Mountains—the sixth longest tunnel on the North American continent and fourth longest under the American flag. The shorter tunnel is 4,911 feet long.

And then there are grades. Starting at Whittier, a salt water port on Prince William Sound where the Diesel locomotives were unloaded from an Army transport, the roadbed ascends 141 ft. in five miles, the highest point being in Bear Valley just between the two tunnels. It then gradually drops 114.60 ft. to an elevation of 26.40 ft. above mean sea level at Portage. The remainder of the run from Portage to Anchorage is at water grade except three miles of 1% grade over Potter Hill. The grade rise on the line between Seward and Portage is

Map of the Alaska Railroad development.



lco-G.E. Diesel locomotive after being unloaded at the Whittier dock.

1,436 feet and on the new cut-off line the grade is 122 ft.

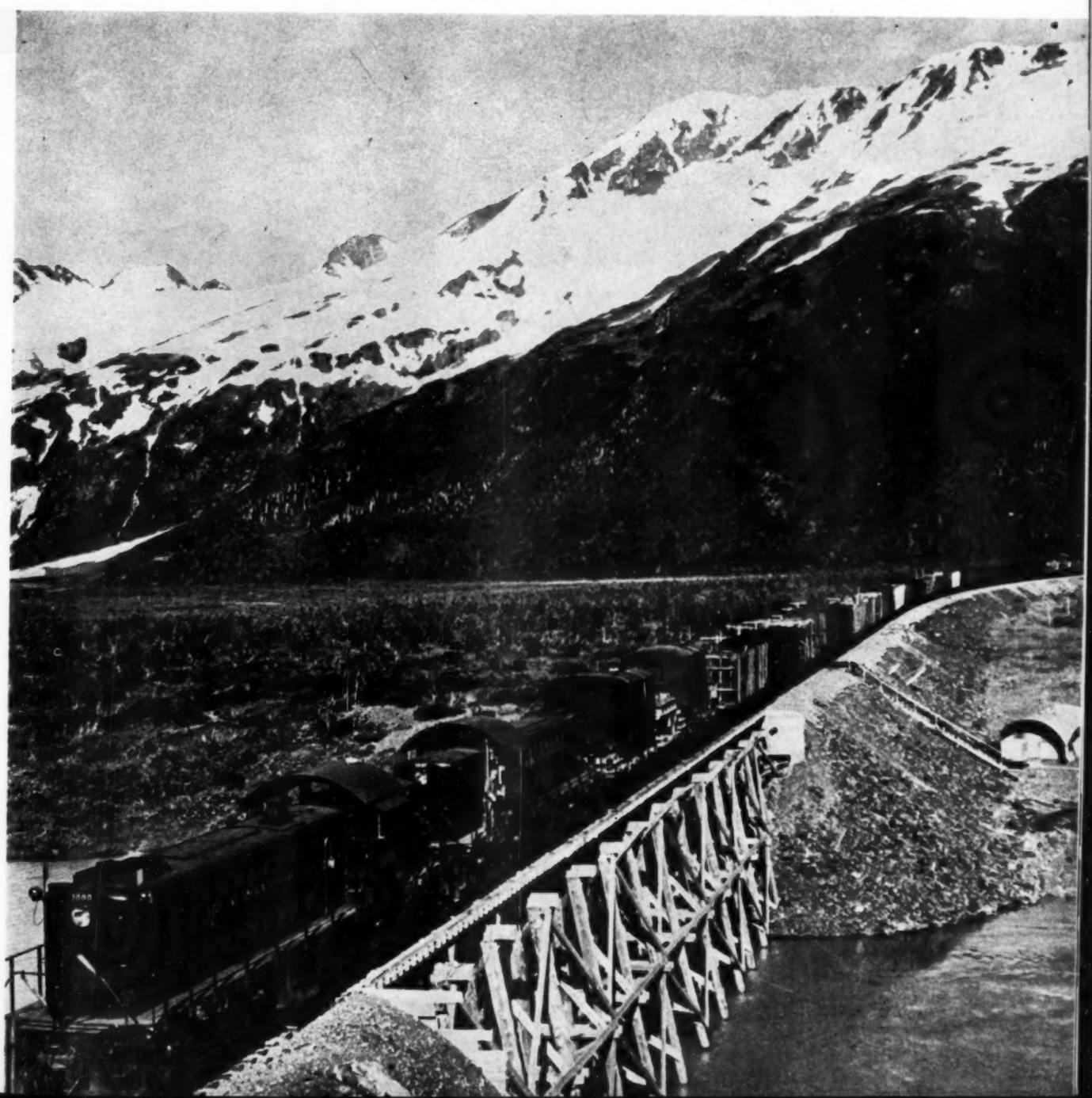
Aside from being a vital supply line in the war emergency the Alaska Railroad has an assured future in serving the rich coal, gold and placer tin mines along its route as well as the fertile farming sections in the Matanuska and Tanana Valleys. Another recognized industry in the territory served by the railroad is the raising of fur-bearing animals including silver and black foxes and mink. Fur shipments to the United States from Alaska in 1940 were valued at better than 2 million dollars.

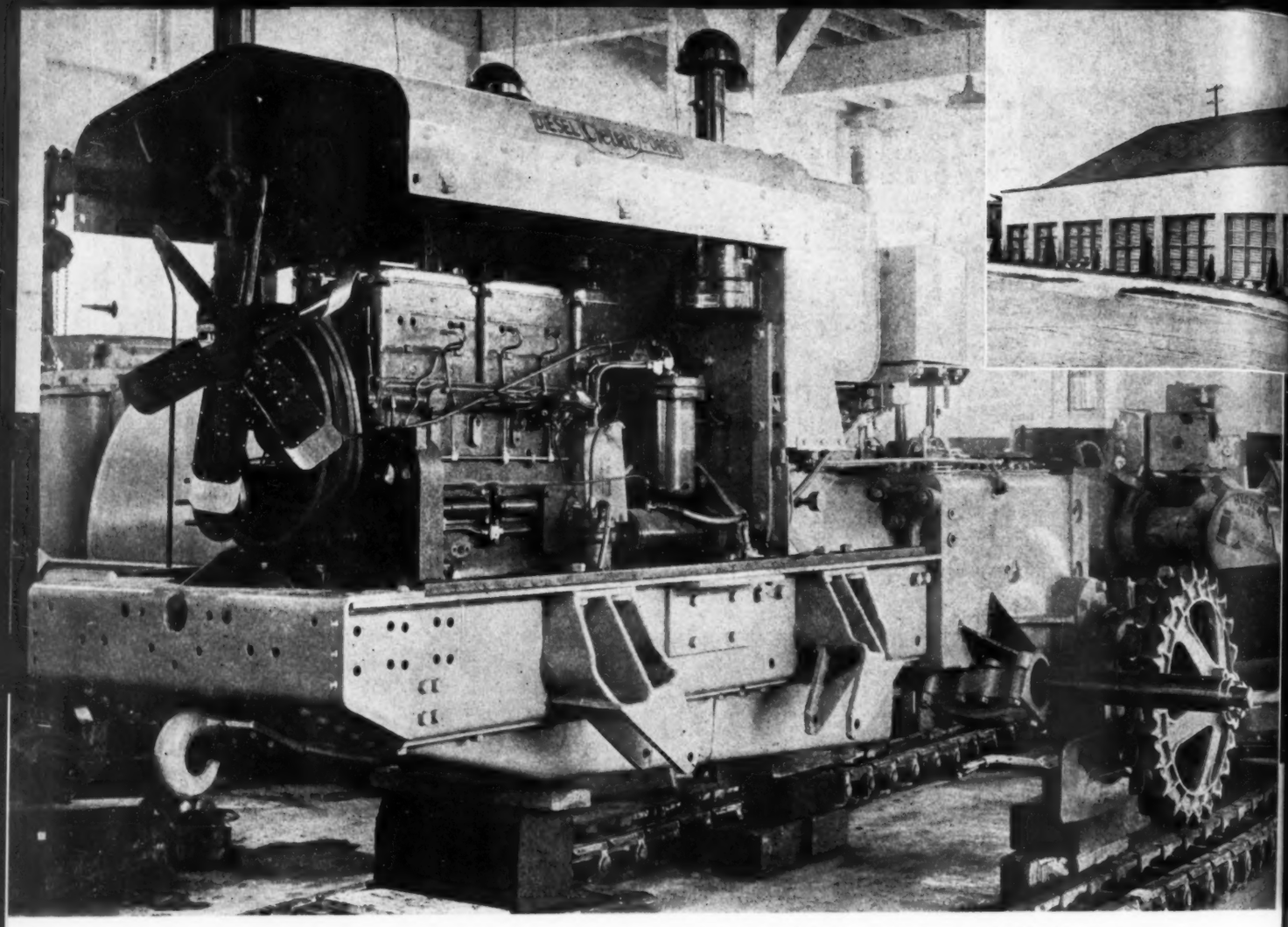
On their initial run the new Alco-G.E. Diesel locomotives, coupled together as a pair, hauled the longest train ever moved from Whittier to Anchorage—a train of 35 cars. Returning the following day broke their own record by bringing in a train of 47 loaded cars. Previously the steam locomotives had hauled only 25 cars.

At the conclusion of the first run, Colonel Ohlson, civilian General Manager of the Alaska Railroad said that the two Diesels can pull 2,250 tons in one train from Whittier to Anchorage and their fuel capacity will permit two round trips without servicing. He further said, "The operating costs of the Diesels will be less than that of steam locomotives and the trains

. . . . *And now please turn to page 99* . . . .

Northward-bound freight train drawn by the Alco-G.E. Diesel going through Bear Valley between the Whittier-Portage Tunnels.





A Cummins Diesel being installed in a Cletrac chassis for a tough logging assignment in the Northwest.

"NOW WE ARE LOGGIN'!"

By F. HAL HIGGINS

No wonder the U. S. Government picked Claude Sersanous, president of Loggers and Contractors Company, Portland, Oregon, to head up the Oregon State Salvage Committee, War Production Board. Sersanous junked most of the state's old metal by making it obsolete over the past 35 years, mostly in the past decade since the arrival of the Diesel tractor revolutionized old Paul Bunyan of logging lore. Oregon's salvage record during the war period has been outstanding in the nation.

Young Sersanous started his career in the sale and service of heavy equipment in the toughest of all fields—logging—as well as in contracting in 1906 following a few years in the hardware and implement business. The young hardware salesman had graduated from high school and a business college before getting to Portland in 1902. From 1906 to 1909, he was with Zimmerman, Wells, Brown; going to Loggers & Contractors Machinery Co. from 1910 to 1911, then he moved over to Willamette Iron and Steel Works for five years. In 1916, Sersanous was back with Loggers and Contractors as junior partner where he remained to become president in 1923 upon the death of J. H. La Maree. In 1930, the Caterpillar Tractor was taken on by the Loggers' and Contractors as their main line of tractors for both agriculture and heavy fields.

Right there was the start of the revolution in power in all fields of the Northwest, as Caterpillar began offering its Diesels late in 1931. Not till '32 did any reach the Northwest. Your Old Reporter recalls going up to the Northwest a time or two to meet Mr. Sersanous on the job in his territory just before the Diesel era opened. He recalls that he knew his agricultural and logging territory as no other northwest dealer. It was a tough one, too, with logging on every side of the famous Willamette Valley of small farms hewed from the "forest primeval" where the nation's grass seed crops were grown. But with the finest kind of cooperation, diplomacy and knowledge of men and machines, Sersanous helped us put on the world's record non-stop tractor run with the Oregon State College engineers handling it for world-wide publicity and sales.

So, learning that Sernanous now handles the Cletrac line of Diesel tractors with an exclusive logging and contracting field that permits concentration on the heavy stuff, your OR dropped into President Sersanous' office after checking with Western Manager Gard Groce of Cleveland Tractor Co. and learning that this was the top logging tractor spot for the U. S. in his eyes. The renewing old and pleasant aquaintances over, the question of wartime service in an essential industry like logging immediately

Top view shows the Loggers & Contractors Machinery Company plant at Portland, Oregon. Above: Claude I. Sersanous, president of the company.

Rear view of the Cletrac tractor powered with a Cummins Diesel and Carcco winch which enables the unit to sit down, reach across ravines and snake logs out of inaccessible spots.

came to the front. Mr. Sersanous called in his Service Logging Sales Manager, Jim Meany. "Before any tractor is worked by our mechanics," explained Mr. Sersanous, "it is steam cleaned and all the dirt and grease removed to facilitate quicker repair and to uncover any breakages, cracks or other things hidden by dirt and grease. This cleaning is done under some 300 pounds pressure with hot water and solvents. The tractor then goes to a stall underneath the 5-ton crane and is dismantled preparatory to repairing. The engine is removed entirely to facilitate repair and to permit every part of it to be carefully inspected before reassembly. As our work is very much that of replacement, we install new parts. "We do not have many tools in the shop, but we do have a machine for testing all kinds of Diesel injection apparatus and pumps. We have one lathe, a large hand press, a large drill press, grinders, valve reseaters, as well as a large hydraulic wheel press for pressing pins and bushings out of tracks.

"We always have operated on a basis of guaranteeing our work for a period of thirty days, as to material and workmanship. OPA regulations have increased this now to sixty days. We stand behind this guarantee by advising the customer that our place of business for mailing purposes is 240 S. E., Clay Street, but if mail is not fast enough, our telephone number is East 1128. We have built up a very satisfactory repair business on this policy. In war time, every minute is precious, as a Diesel tractor down may tie up an entire job when Army, Navy, Coast Guard is desperate for lumber."

Asked about the experience of Loggers and Contractors with the Cummins Diesel in the Cletrac chassis, Mr. Sersanous said: "We found the Cummins' medium speed engine well adapted to operations in some spots," he admitted. "We get the full power of the Diesel without the jerk on the clutch from the severe engagement of clutch."

In the revolutionary logging conferences when the whole industry met to observe and study the first Diesel tractors to appear in the woods back in the early 1930's when Mr. Sersanous as the Portland Caterpillar dealer got there "fustest with the mostest" to skim the cream off the Diesel tractor field for several years until competition got powered with Diesels instead of gasoline, the head of Loggers and Contractors chuckled reminiscently. "Yes, we showed the logger just what he was looking for at a time when the industry was ready for some sound, deep cost-cutting to get out of the red and back to profit. Those old gasoline logging tractors were burning 80 gallons a day, and the Diesels we showed them started operating on a third of the amount of fuel that cost from a third to half as much per gallon. Is it any wonder that logging is now done by tractors that are 99 44/100 Diesel. Only a few old single-tractor jobs are still gasoline where some odd chap never got ahead far enough to buy himself a Diesel and get out of the marginal spot. But, there's still bigger Diesel fields ahead. The super-charged engines for tractors are the new thing. Maybe the cyclotron lads up on the hill back of the University of California have something coming up. Again, I expect those high octane lads at the laboratories of the big oil concerns will come up with a big jump ahead in fuels that will call for newer and better Diesels to lift us out of the next post-war reajustment. Anyway, the Diesel dominates the woods right now, and every Diesel is doing super-tractor work there."

GREAT LAKES DIESEL FERRY

MYSTIC

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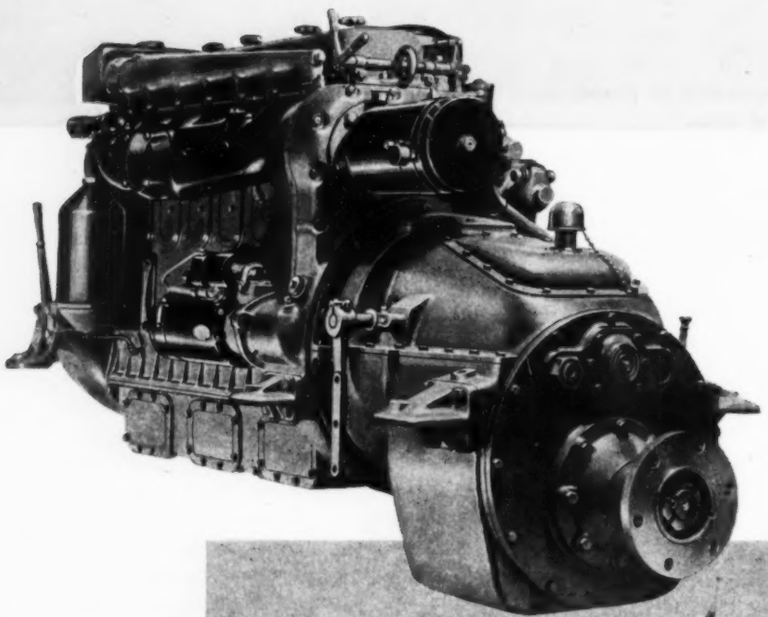
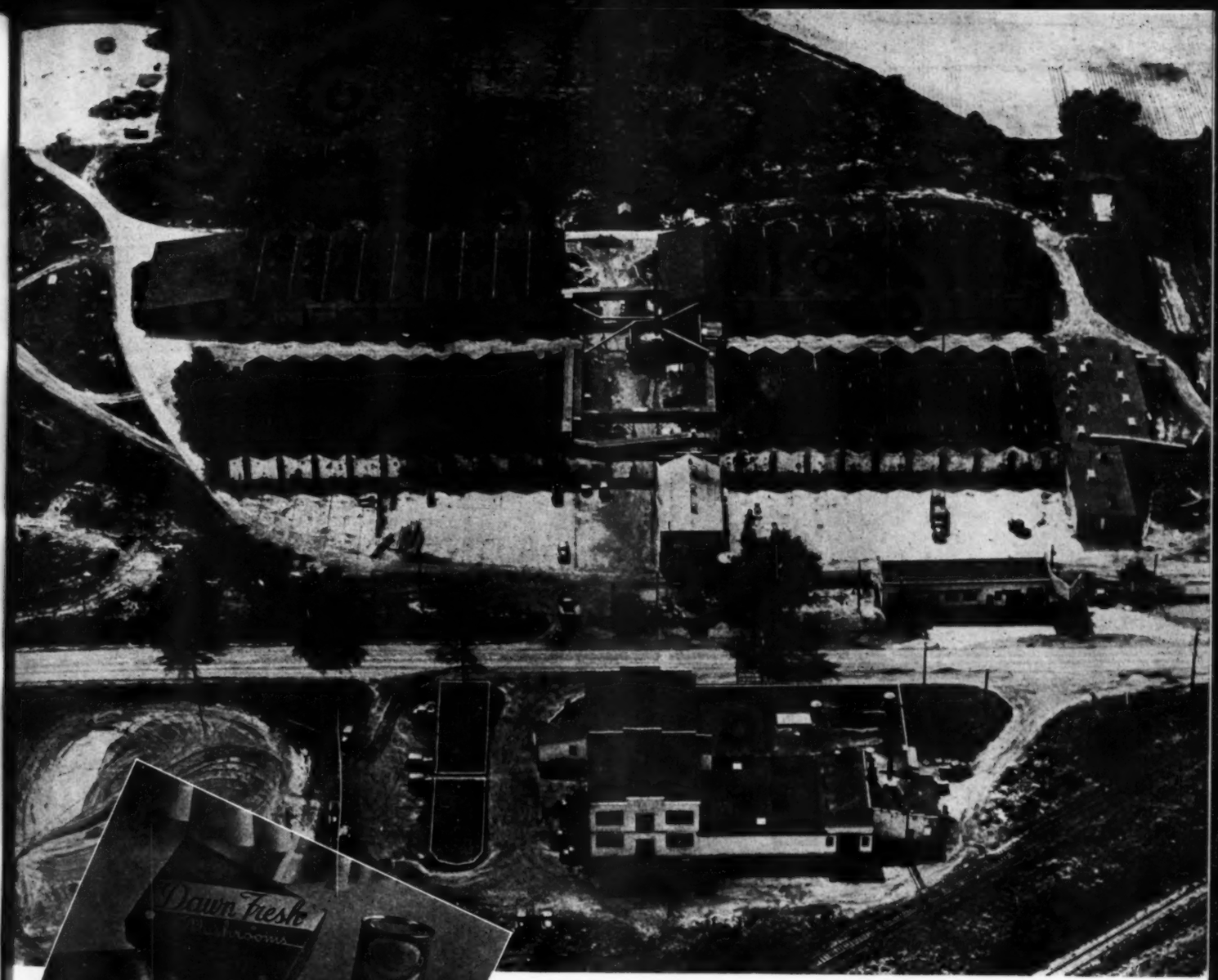
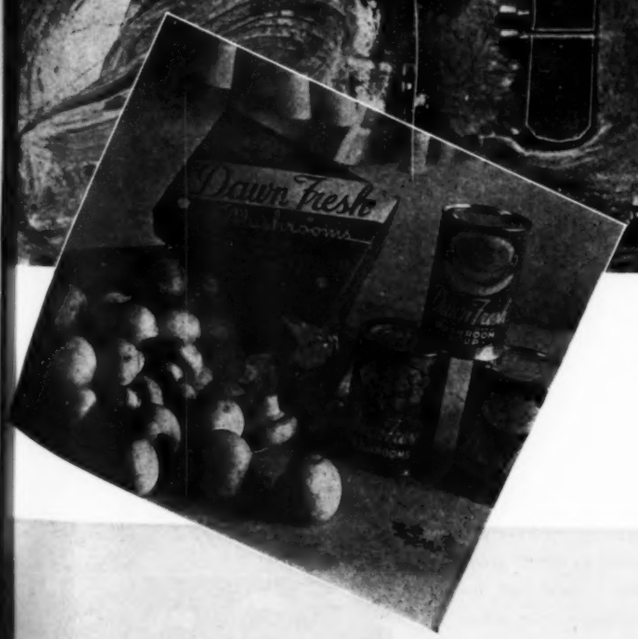


SUMMER on the Great Lakes is a compendium of the joys of living—or a summer's day at Put-In-Bay, "Nature's Wonderland," (that's what the travel folder calls it) is something to write home about. It's only a 40-minute ride from Catawba Point, jutting out into Lake Erie from the Northern Ohio mainland, to Put-In-Bay and Middle Bass Islands but Erie Isle Ferry Company make it mighty attractive. They have put into service a brand new all steel, streamlined Diesel Ferry for passengers and cars and they gave it the intriguing name, *Mystic Isle*. She's modern—John Alden of Boston designed her—110 ft. long, 32 ft. beam—built by Burger Boat Company, Manitowoc, Wisconsin and powered with a pair of 165 hp. Gray Marine Diesels, driving twin screws through 4.4:1 reduction gears. Wartime restrictions held back the accompanying illustrations until now but the motor ferry *Mystic Isle* awaits your pleasure.





Above: Aerial view of the Michigan Mushroom Company's air conditioned growing houses and cannery. Left: About half of the crop is canned and packaged as shown here.

"DIESELS WITH MUSHROOMS"

By HENRY J. BARBOUR

SOME things just naturally go together—such as ham and eggs, bread and butter, apple pie and cheese. But there was one dish—before the days of rationing, red points and high prices that brought to every he-man the desire to partake—that was a rich, juicy, succulent steak smothered with mushrooms. Boy, that *was* a dish and still *is*, if you can get the steak.

But mushrooms and Diesel engines—that's a combination you perhaps never thought of. Yet it is one that is playing an important role in the production of mushrooms in these United States—in the first and largest air-conditioned mushroom growing plant in the world.

Located in Niles, Michigan, the Michigan Mushroom Company with branch plants at Milwaukee, Wisconsin, Terre Haute, Indiana,

Naperville, Illinois, and Olympia, Washington is the dreamchild of Myron C. Herrick, its dynamic President and his brother Melvin B., who is Treasurer of the organization.

It all started back in 1919 when Myron C. Herrick became interested in buying out the Niles plant which was then owned by Edward Jacobs, the first mushroom canner in America. Herrick, a law graduate, who was recuperating from wounds received in World War I, was in Chester, Pa., became inteersted in the industry there. As his strength returned he went into the business, later going to Colorado, his native state. Eventually, he came to Niles, where he purchased the property which has increased in size many fold since then.

At present in the Niles hot houses alone there are approximately a half million square feet of beds devoted to the growing of mushrooms in the 44 cool, dark, air-conditioned houses comprising the "factory."

Each house is about 100 feet long with long rows of beds, seven and eight tiers high, which are the source of those tasty mushrooms which spring from carefully selected spawn in a mixture of compost and sandy loam.

It is in the air-conditioning of these 44 growing houses where the low-cost and dependability of Diesel power plays such an important role. Purchased electric power was used at first. About 75,000 kw. were used monthly during the summer months—the peak of the season. This dropped to as low as 20,000 kw. during the winter months. With a two hundred dollar-per-month demand charge as pointed out by C. A. Purdy, Chief Engineer of the plant, and by the way a most ingenious man, the power cost for the plant was plenty high.

Diesels were then considered and the company purchased its first Diesel—a Fairbanks-Morse 210 hp. generating unit in 1935. So well did it do its job of supplying dependable power at a cost per kw. of about 5 mills, that additional units were installed as load requirements increased. In 1937 a 150 hp. Diesel generating unit was installed and in 1940 a 55 hp. unit was added—both Fairbanks-Morse.

These units now supply the electric light and power for both the group of 44 mushroom growing rooms and for operating the cannery where tasty mushroom buttons and rich nutritious mushroom soup, as well as asparagus and some other vegetables are canned in season, all done in spotless surroundings.

In addition, the Diesels provide the power for the electrically operated trucks, cranes and compost turner in the compost yard. The connected motor load totals 445 hp. and lights total 52 kw. or a total of 515 hp.

The ingenuity of Chief Engineer C. A. Purdy is shown in the use of electric power in the compost yards. Before the installation of low-cost Diesel prime movers the trucks, compost turner and cranes were operated by gasoline engines. On cold winter days when the compost had to be turned and hauled to the growing rooms it was often necessary to operate the gasoline engines continuously to prevent their freezing. Came gasoline rationing and the difficulty of getting fuel. That's where Chief Engineer Purdy came to the rescue. The gasoline engines were removed and Fairbanks-Morse electric motors installed in the trucks, cranes and turner. The two cranes are equipped with 40 hp. and 25 hp. motors respectively. A 25 hp. motor for propulsion was placed in the truck carrying the boom and a similar electric motor replaced the engines in the truck which carries the revolving drum or compost turner. The drum itself is operated by a 10 hp. two speed Fairbanks-Morse electric motor.

Nine poles are strategically located in the compost yard each fitted with receptacles for 60 ampere 440 volts. Each crane and truck is equipped with 250 feet, three phase 4-wire rubber covered indestructible cable. The fourth wire is grounded for safety. Many tons of compost are mixed and turned daily.

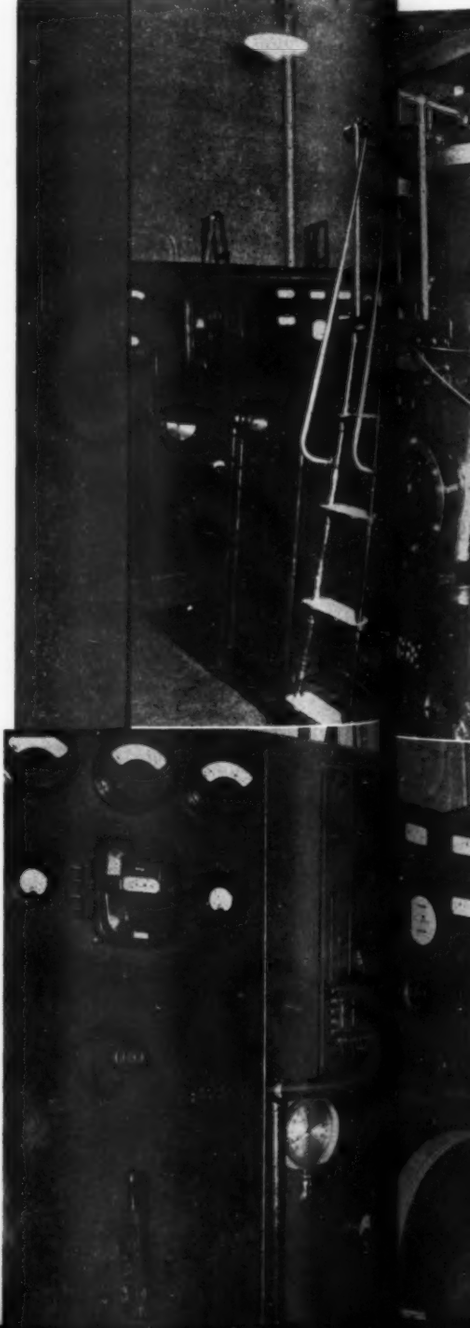
Two Fairbanks-Morse deep well turbine-type pumps with 15 hp. F-M electric motors pumping water from wells 183 feet in depth supply 500 gallons of water per minute. They supply the enormous volume of water required to keep the growing rooms at a constant temperature of about 54-58 degrees. Humidity is kept close to 90. Two fans operated by 30 hp. Fairbanks-Morse electric motors supply about 50,000 cubic feet of cool mist air per minute to the 44 growing houses. The water that is used here for air-conditioning is then pumped to the power house where it is used again for cooling the heat exchanger. A closed system of water cooling is used.

A common header connects all the three engines in the power house to the warm water circuit so that any engine may be started immediately irrespective of temperature.

Fuel oil is stored in a vertical tank of 15,700 gallon capacity. The fuel is fed by gravity through a Bowser meter to the three day tanks (1 for each engine) and thence from the day tanks by the fuel pumps on the Diesels. Edge type filters are located between the day tanks and the engines. The switchboard has its full complement of instruments, alarm signals, etc. required to make the operations of the power units fool-proof.

The amount of time required to see that the Diesels perform satisfactorily is small, according to Chief Engineer Purdy. About an hour each morning is consumed in filling the day tanks and oil tanks. Each engine is checked each hour which takes about two minutes.

Engines are overhauled annually with pistons removed and wrist pins, cylinders and rings cleaned thoroughly. This makes for successful operation, says Mr. Purdy, and repairs consist-



Engine room switchboard carrying F-M gauges, Weston meters, Brown and Alnor pyrometers.

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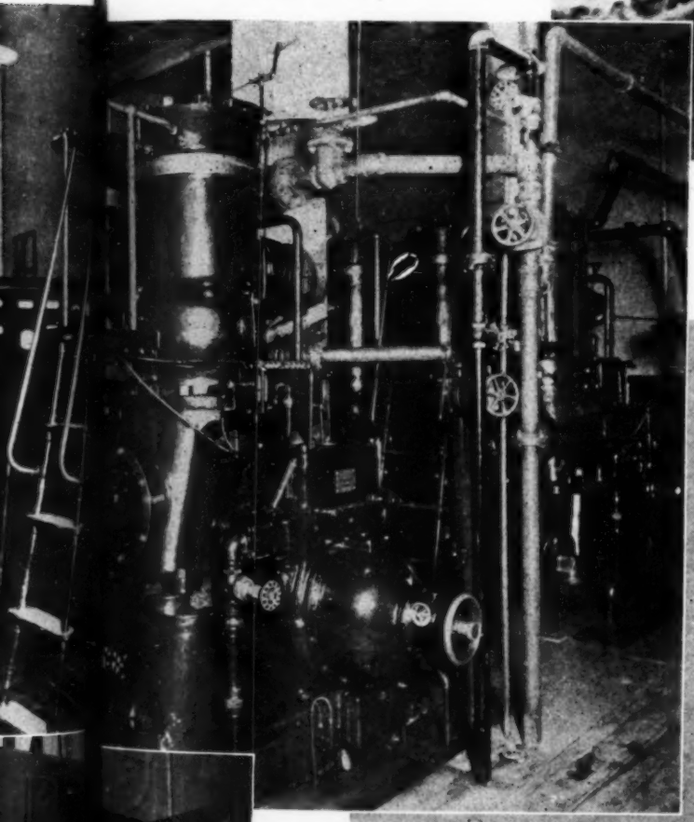
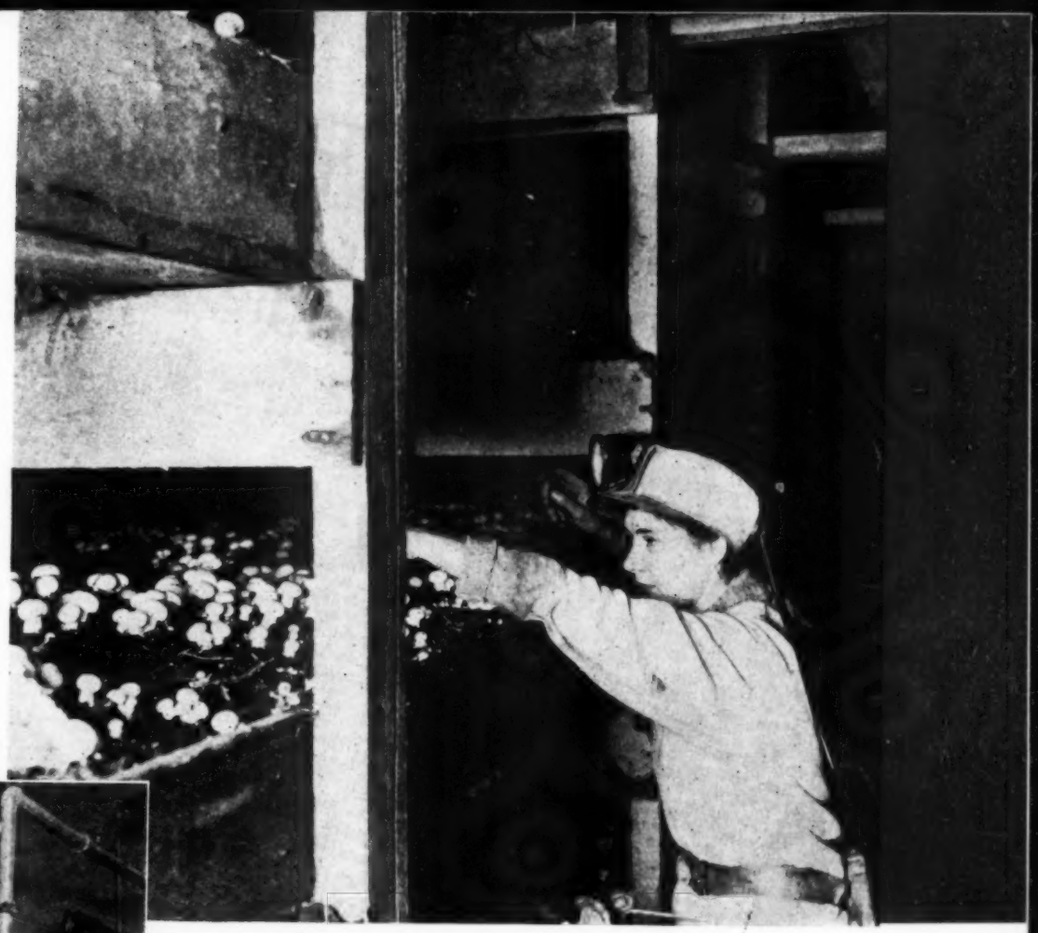
ing of a few rings each year are held to a minimum.

The growing of mushrooms requires absolute temperature and humidity control, says Louis E. Walton, Secretary of the company and operating manager of the Niles plant. The temperature in the growing houses is held to 56-58 degrees which produces a fast-growing, tender mushroom with the greatest flavor. Any temperature above 63 degrees begins to be critical, as the heat would kill the spawn. By uniform temperature and humidity control daily production and established rate of growth is also controlled, which in turn avoids glutting.

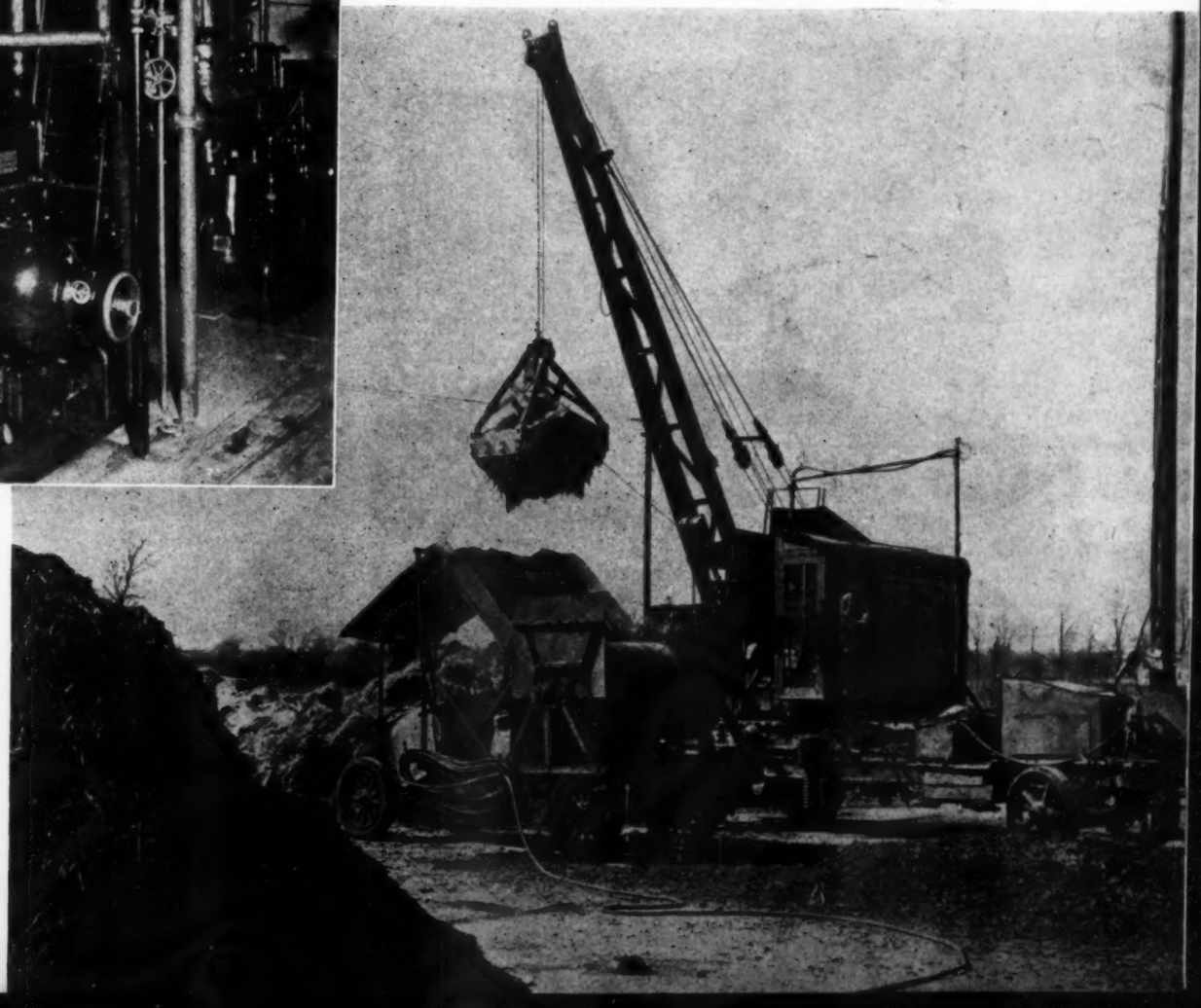
View of the engine room showing two of the three F-M Diesels which handle the entire air conditioning, power and lighting loads.





A mushroom picking scene. Girls and boys wearing miners lamps pick the crop every morning.

Compost mixed with gypsum is turned daily to make it fine. All of the compost handling equipment is powered with F-M electric motors.

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Navy Rescue Tug Saves Tanker In 24-Day Struggle
TODAY the Navy released the story of how the Choctaw, a Navy Rescue Tug, raced to the rescue of the crippled, fire-swept tanker, Murfreesboro, 950 miles away.
In heavy weather the Murfreesboro had been rammed by another ship in the convoy whose steering gear had failed. Fire engulfed the two vessels. The other ship sank. For safety the convoy kept on.
When the Choctaw reached the tanker, the fire had been put out. High seas were crashing into her gaping hull. She was listing low in the water.
Line after line parted as the sturdy tug struggled to get the wallowing crippled tanker under way. Speed averaged only 1.67 knots. In one 24-hour period, the Choctaw actually lost 3 miles.
After 24 days, three times longer than she had ever been to sea before, and having accomplished the longest tow of the war, the Choctaw brought her charge into safe harbor—and with 80% of the tanker's precious load of hi-test gasoline still intact.
Latest Secret Weapon
One-Man Torpedo Succeeds Off Normandy, Nazis Say
LONDON,
Dungeness crabs fresh from Pacific waters, rainbow trout caught Wednesday in Rocky Mountain streams and fresh fruits and vegetables picked that same day in California, northwestern Washington and Colorado were served
German Give N Soldier
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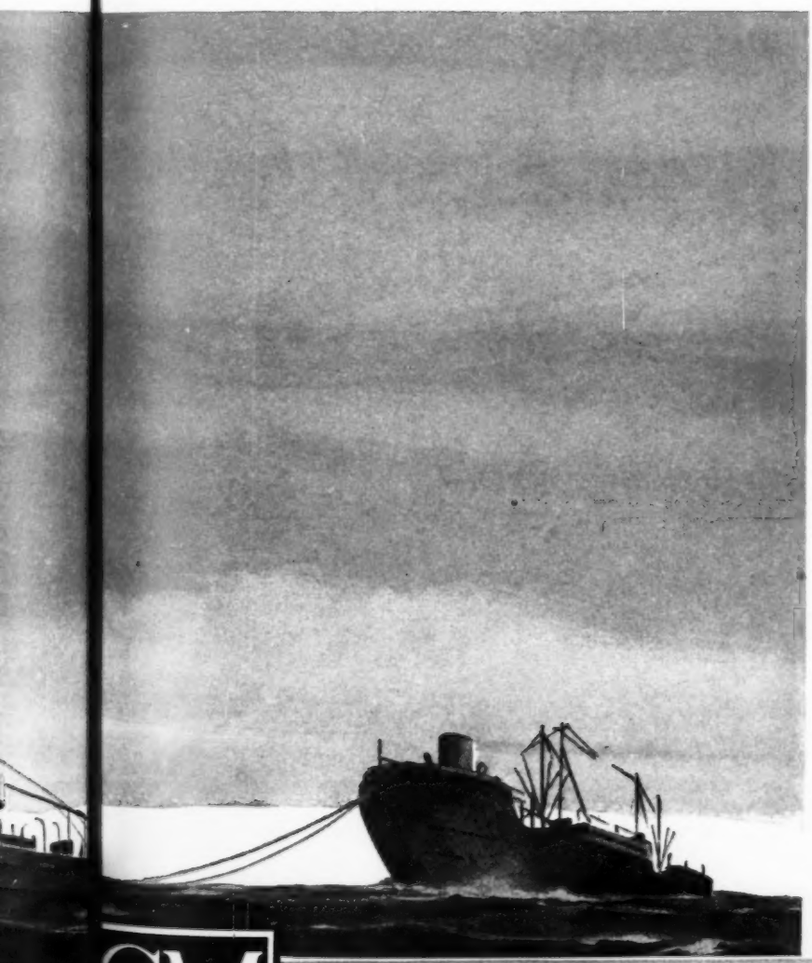


"Get the Murfreesboro" were the Choctaw's orders.

She did. She saved the scorched and battered tanker, and 4½ million gallons of precious hi-test gasoline.

It took 24 days of the toughest towing a tug could be pitted against.

It took a sturdy ship, a stalwart crew and a dependable, long-range power plant.

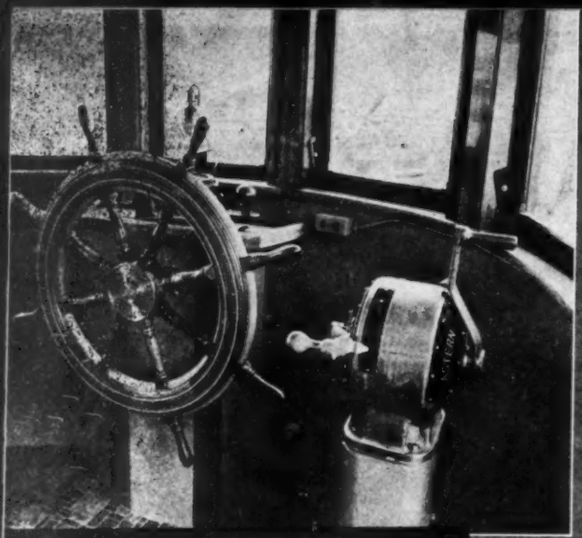
Her power plant is a General Motors Diesel-Electric drive.

GM
GENERAL MOTORS
DIESEL POWER

ENGINES...150 to 2000 H.P. **CLEVELAND DIESEL ENGINE DIVISION,** Cleveland 11, O.

ENGINES.....15 to 250 H.P. DETROIT DIESEL ENGINE DIVISION, Detroit 23, Mich.

LOCOMOTIVES..... ELECTRO-MOTIVE DIVISION, La Grange, Ill.



FIRST SUPERCHARGED DIESEL PURSE SEINER

To Mr. Spiro Babich, noted fisherman of Gig Harbor, Washington, goes the honor of having taken delivery of not only one of the very first "Postwar" giant-type Purse Seiners completed on the Pacific Coast, but also the first supercharged Diesel Seiner turned out in the large new program of Pacific Coast fishing vessel construction.

Powered with a compact, 6 cylinder 12 x 15 in. four-cycle Enterprise Diesel, his new *Liberator*, just completed at the busy plant of Pacific Boatbuilding Co., Tacoma, boasts of a main engine that will deliver 600 horsepower at 400 rpm. all because a mere 1,000 lbs. of weight in the form of a turbo-Supercharger was added to the engine, raising by 50% the output on the drive shaft!

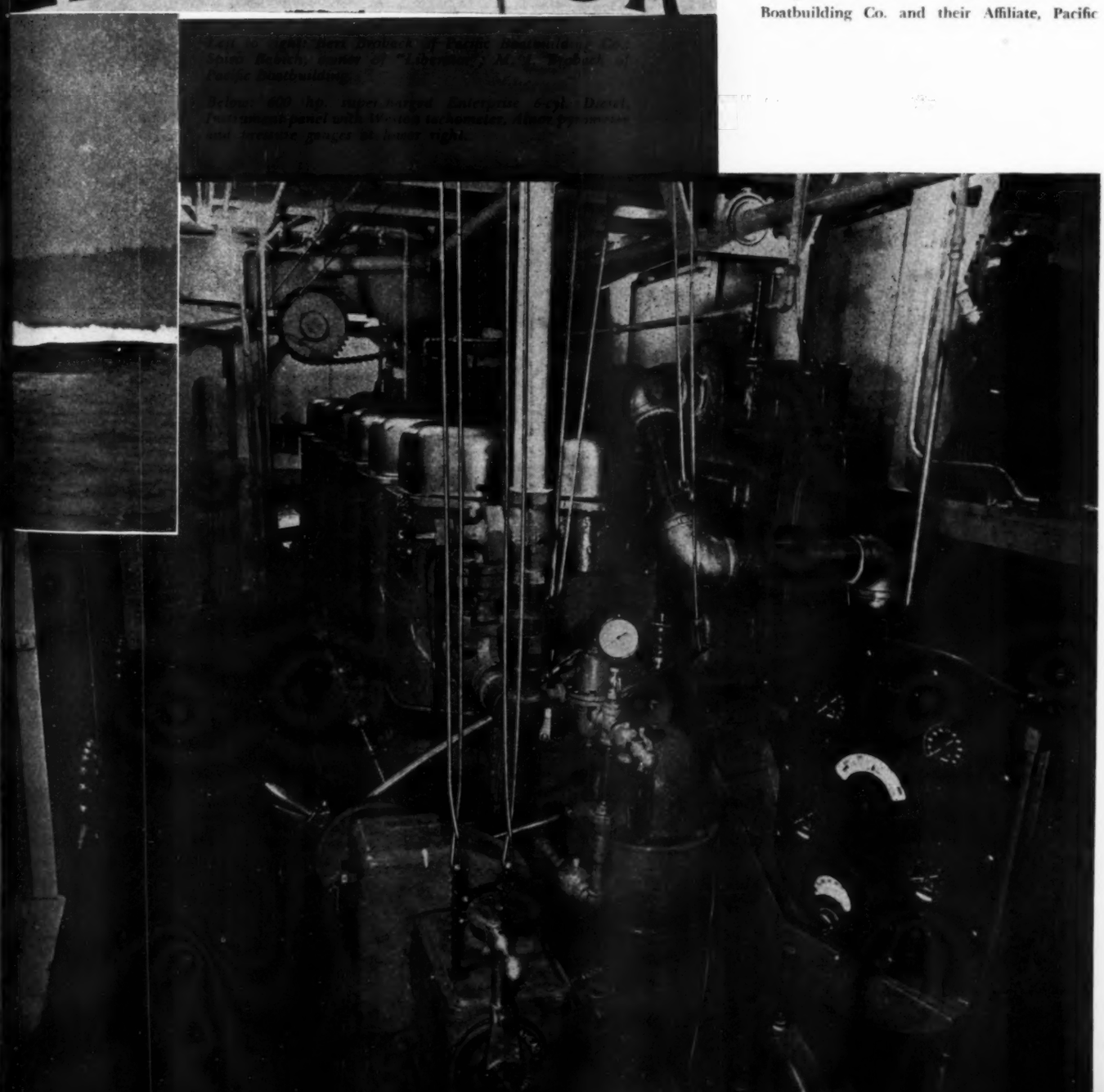
In simple language the supercharger boosted the power 50% by a mere 3% increase in total engine weight. The regular six cylinder Enterprise Diesel of that size, and the same rpm., develops 400 hp., and weighs 34,500 lbs. The supercharged model weighs but 1,000 lbs. more with its high speed, compact turbocharger, and delivers 600 hp. at the same 400 rpm. operating speed.

Mr. Babich's *Liberator* also represents the newest and highest powered seiner type yet built on Puget Sound. For years 240, 360 and 400 hp was considered prime for purse seiners, and this added power raises the overall loaded speed with favorable tide and wind to slightly in excess of 12 knots as compared with an average of 9½ to 10½ knots formerly considered adequate. Faster runs with a load and against headwinds are possible with increased power, and at the end of the season more fish delivered to port. And more profits, for owner and every member of the crew.

The *Liberator* is 91.5 x 24.3 x 11.25 ft. overall with 12 ft. loaded draft, when carrying 200

tons of Pilchards. It is of luxury type, having every feature of convenience and comfort for the crew of 12, including extra large galley and roomy crew's quarters, as well as large enclosed and outdoor pilot house space and roomy captain's quarters.

It is the 19th in the series of seiners owned by Mr. Babich and is heavily built of Douglas fir, with the usual famous 1 piece fir keel, 14 x 16 inches; 14 x 16 in. fir keelson, also one piece; heavy fir planking and 8-in. sawed fir framing. The entire fish hold is caulked wood and cemented at the bottom, and gumwood shoe and guard and rails are fitted while the deck-house exterior is of Super Harboard waterproof plywood and trimmed throughout in Honduras mahogany. Bright enamel paint and natural finished mahogany trim makes this a distinctive job and a credit to the builders. Pacific Boatbuilding Co. and their Affiliate, Pacific



Another view of compact, moderate speed Enterprise supercharged Diesel on "Liberator." The 70 hp. Atlas auxiliary Diesel shown in far forward (bow) of engine room.

Machine & Iron Works who handled all machine work and deck machinery fabrication.

Liberator carries 10½ tons of seine net, which is 1750 ft. long and 180 ft. deep, representing a cost item alone of over $12,000, including weights and floats.

Main propulsion, as noted, is a 600 hp. supercharged Enterprise Diesel, located far forward, so the control end is directly under the pilot house, with extension shafting carried upward for full pilot house control, both inside and on the outside control stand forward of the enclosed pilot house area. Even this shows a touch of luxury with nonskid well drained top flooring and a plate glass windshield around the forward edge.

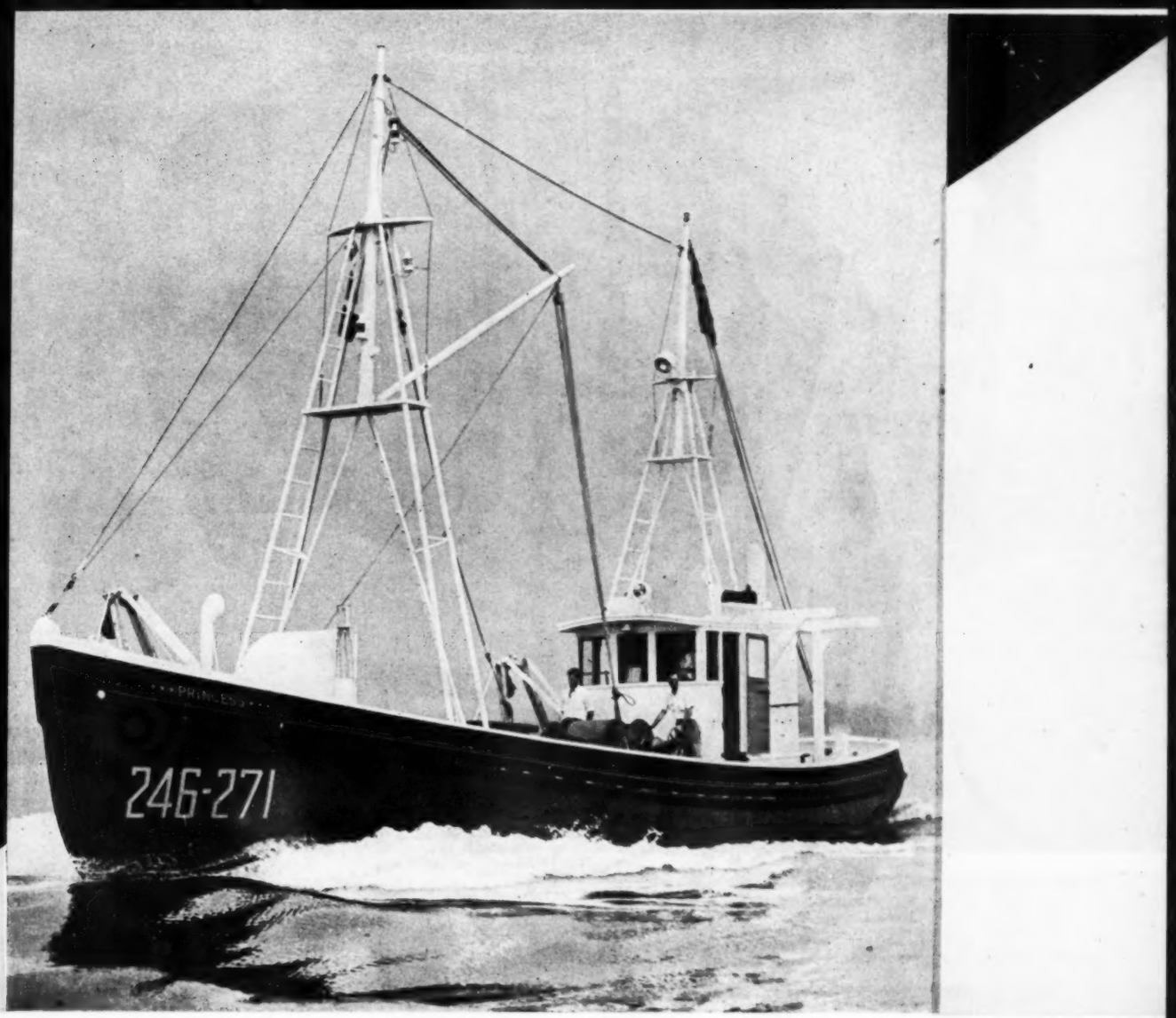
The traditional lineshaft drive for the anchor windlass and purse winch, as well as four pumps and an auxiliary generator, is handled by a 4 cylinder 70 hp. Atlas Diesel operating through lineshafting and clutches. This is mounted on an elevated platform in the absolute bow of the ship, right behind the stem. Even the chain locker is dispensed with to make more room for the main and auxiliary Diesel. This auxiliary drives two 3 in. deck pumps and two 3 x 4 in. centrifugal bronze bilge and fire pumps and a 3 kw. 110 volt Westinghouse generator to charge the Willard 56-cell storage battery set. Another 3 kw. Westinghouse generator together with a small Quincy air compressor is driven off the main engine flywheel through multiple flat-laid V belt drive, for use when at sea. A 1 cylinder Wisconsin Diesel drives a small 40 cfm. Quincy auxiliary compressor for starting air for the main engine. Two 32 x 86 in. welded steel air bottles and four large fuel oil tanks are fitted aft in the engine room, together with a 150 gallon lube oil tank.

Part of interior of pilot house showing chart table; Intervox direction finder and 2-way, 56 watt Northern Radio telephone, with Weston tachometer, oil and air pressure gauge, and emergency and floodlight control switches.

The main engine drives through a Timken thrust bearing and a 5 inch Tobin Bronze tailshaft a three bladed Doran Bronze propeller, 68 x 46 in. A plain steel rudder and a Lignum Vitae stern bearing are also fitted. Aft of the fish hold are twin steel fuel tanks with capacity of over 4000 gallons, also two 2000-gallon fresh water tanks.

The main deckhouse forward consists of crew's quarters for 12 in a large space, each having spring mattress bunks, roomy locker space and a wash basin. Toilet facilities including a tile shower are located aft on the main deck. The large galley and messroom occupies the entire width of the ship in the after part of the deckhouse. Ingle oil fired range; large double tiled sink, roomy lockers; a miniature butchers chopping block, a needed novelty aboard a seiner; a large built-in icebox with space for 200 lbs. of frozen food and radio receiver near the head of the mess table are some of the features of this galley. Linoleum and tile covers for floors, cupboards and drainboards and ample lighting make this one of the largest and best appointed galleys to be found on any fishing vessel.

The pilot house has a 2-way, 65 watt Northern radio telephone; a Magnavox direction finder, large chart table and carries a Weston tachometer, air and lube oil pressure gauges as well as main engine controls and lighting master switches. A 10-in. searchlight and two large floodlights are also fitted for night operation. A streamlined, two-place welded steel crow's nest is fitted atop the main mast, a novel and very useful feature of this ship. The *Liberator* is registered in Astoria, Ore., and will fish off the Northern California Coast.



DRAGGERS

DeLUXE

By WILBUR W. YOUNG

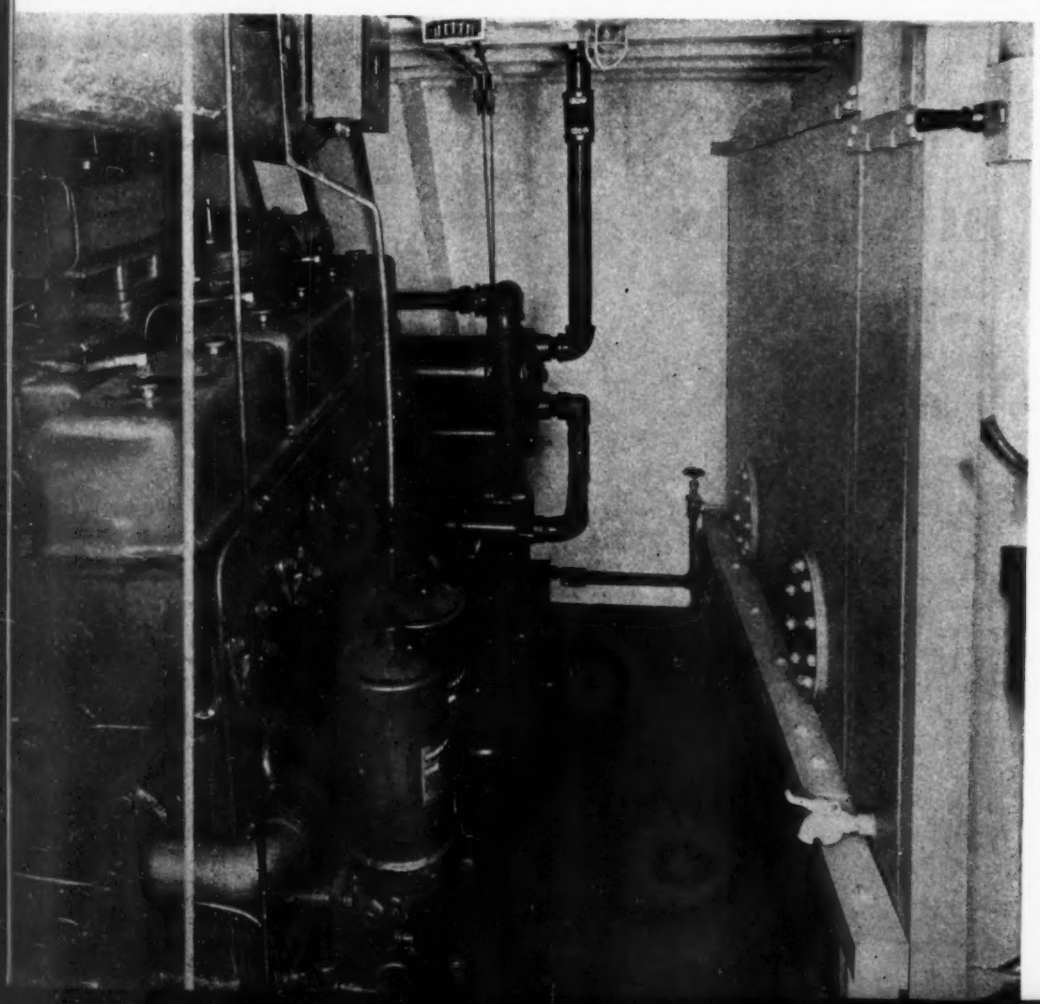
CAN you imagine a lowly dragger so sleek and seaworthy that you would like to have her for your yacht? Well that is the general idea you get when you see the Diesel draggers William Edgar John and Associates has recently turned out of its Milton Point (Rye, N. Y.) yards in a sort of "snap the whip" gesture on the tail end of an astonishing war boat building program. Yes, Bill John, so familiarly hailed by all who come under the spell of his personality, builds that kind of boats whether they be draggers or war craft and speaking of the latter let's take a look at the record of this humming yard since Bill John took it over in 1937.

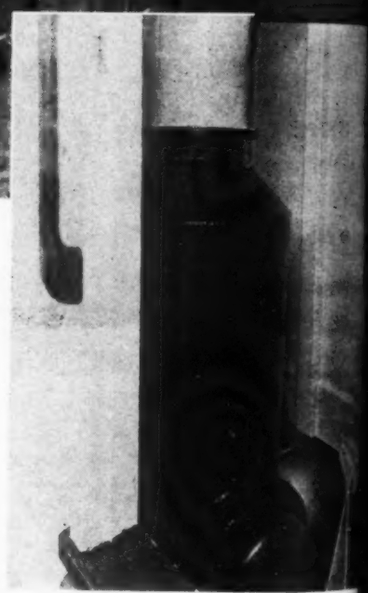
Starting with fifteen on the payroll, making a few small sailboats he has built his staff up to 604 workers and has turned out a total of 232 assorted war boats in exactly three years: 145 Army cargo barges, 110 ft. long, 400 ton capacity. These were completed in 23 months—5 months ahead of schedule; 44 Army harbor tugs, 44 footers using Cummins and Buda-Lanova Diesels and Chrysler motors; 12, 50-foot Navy launches, Buda-Lanova engined; 11, 66-foot special purpose barges, also for the Navy; and 4, 72-foot combat patrol boats for the British Navy under lend-lease—these were powered with pairs of 275 hp. Hercules Diesels.

Of course I did not see all of these vessels but I saw construction views and finished shots and I must say a set of plans is one thing but Bill John's execution of them is quite another. There is such a thing as projecting one's personality into war boats, draggers, and barges and here it has been done. Here you see the exemplification of a statement once made by

Engine room view on the "Princess" showing **Buda-Lanova** *main engine right and Witte Diesel auxiliary, left.*

Another view of the "Princess" main engine. Note DeLuxe lube filters and air jacketed exhaust connection.

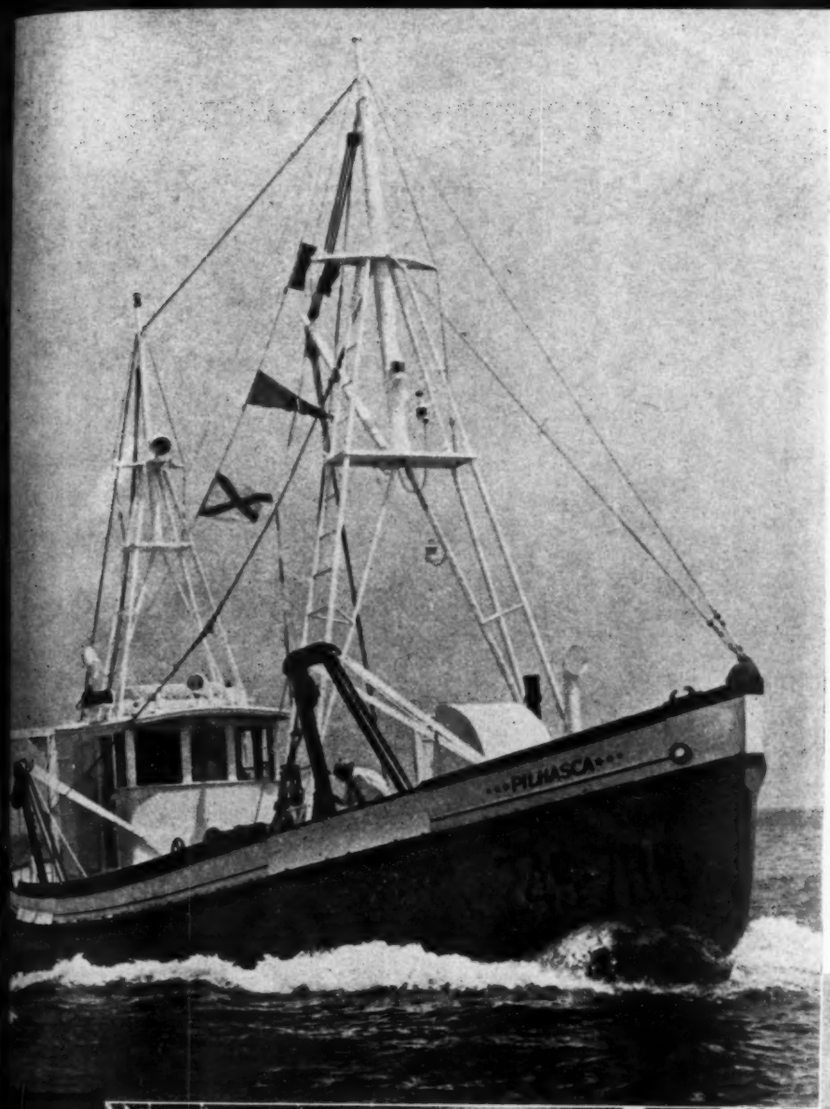




View of the Fluor air-cooled exhaust muffler installation on the "Princess."

one of our greatest contemporary industrialists —"The growth of an organization (and its products), author's parenthesis, is the lengthening shadow of the man at the head of it." Ralph John has built an organization of heterogeneous races, creeds and colors into a democratic, producing whole—thoroughly imbued with his know-how and the will to do its job well. And what's more he has signal Presidential recognition with emphasis on the humanitarian side of his endeavors.

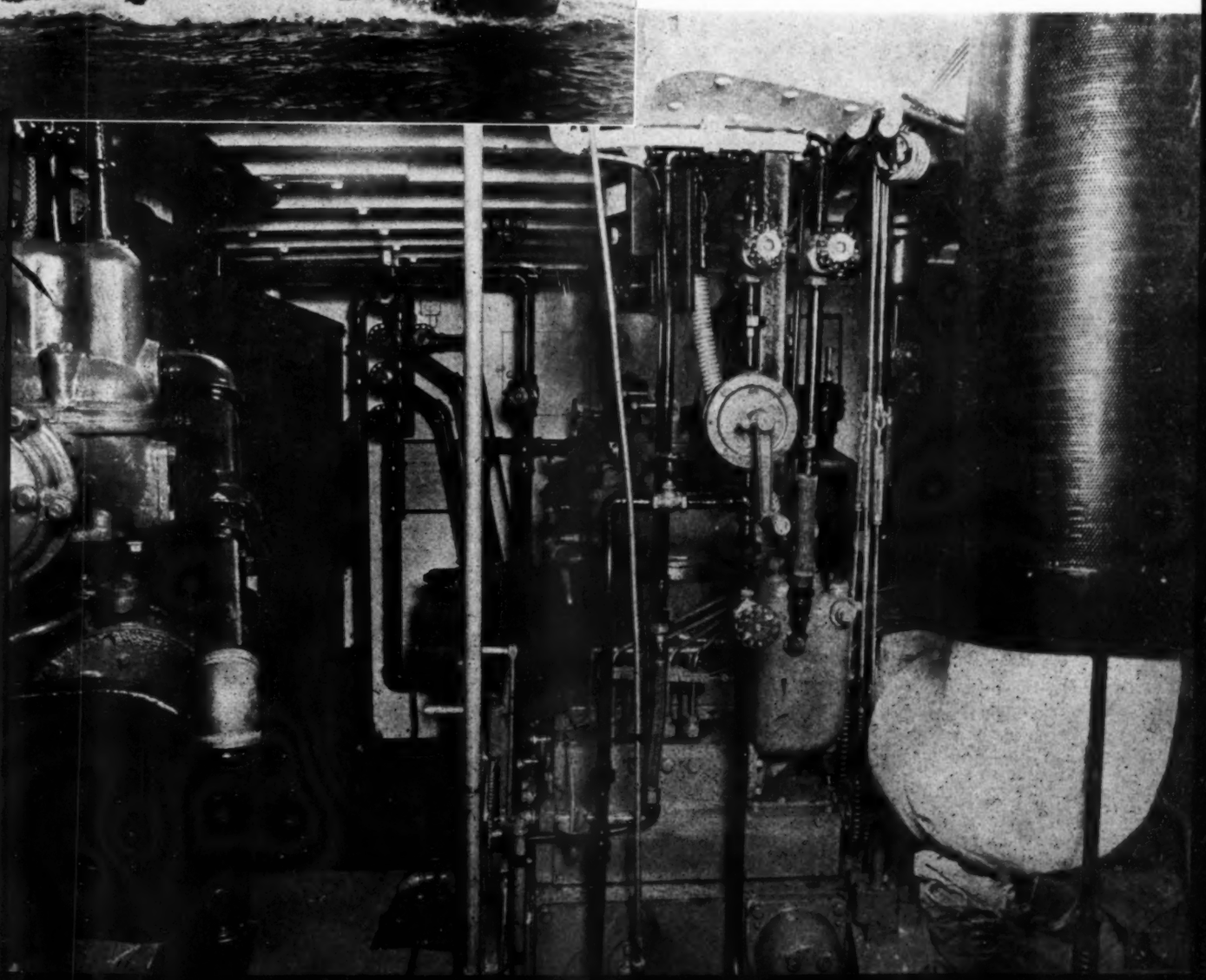
To come back to the draggers. There were the *Sonya* and *Pilhasca*, sisters ships, 60 ft. l.o.a.

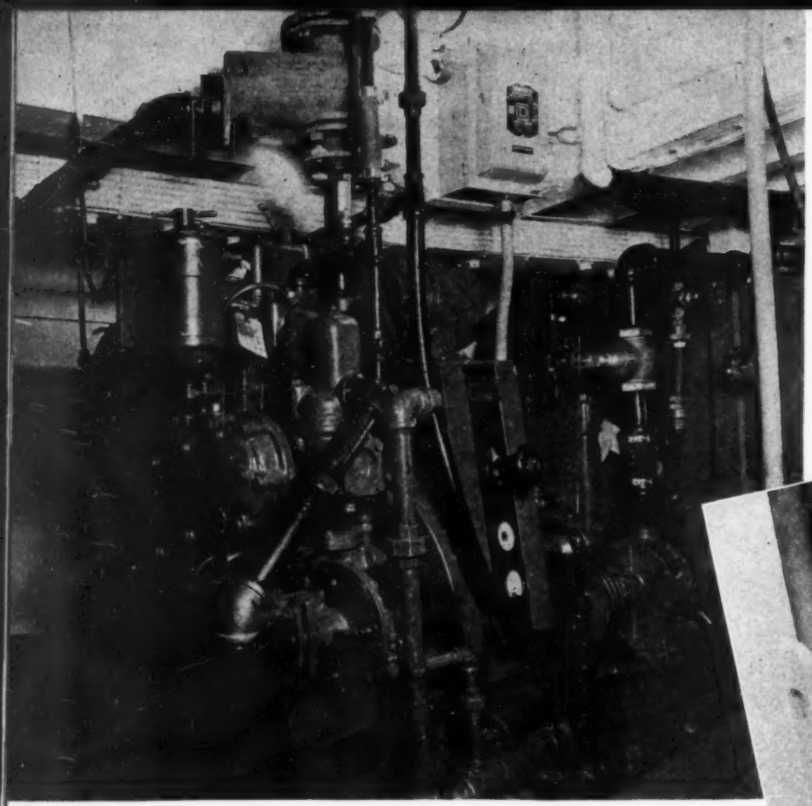


7 ft. 6 in. draft and 16 ft. 6 in. beam, of 39 gross tons and 24 tons capacity. Both built this year, the *Sonya* is owned by the C. G. Wadman Fish Company and runs out of Provincetown under Captain Charles Malaquias. The *Pilhasca* went to John Hall of Wellfleet, Massachusetts who placed Captain Francis Captiva at the helm. Both are bringing in capacity catches.

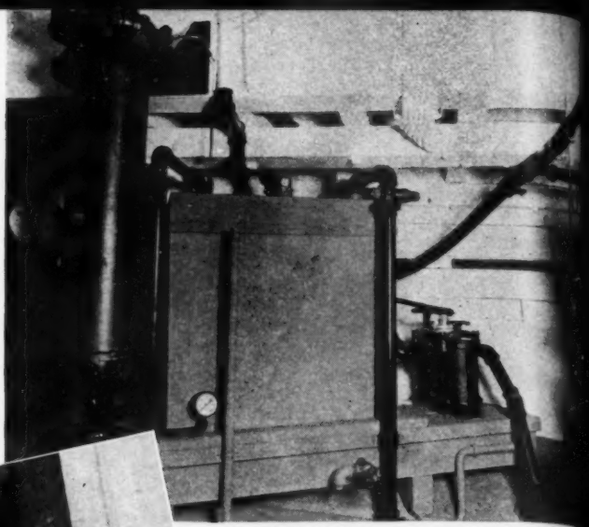
Equipped alike in all details they have for their main engine a Fairbanks-Morse 4-cylinder, direct reversing marine Diesel of 120 hp. at 450 rpm., fitted with a Maxim exhaust silencer, Alnor pyrometer, Ross heat exchanger, Michiana lube oil reclaimer and Stewart-Warner speedometer. Lube, fuel and exhaust connections are Atlantic Metal Hose, lighting storage batteries are Edison and lube oil pressure gauge is U. S. A Detroit Lubricator lube oil temperature alarm switch is provided for further automatic protection. The auxiliary unit is a F-M.

Left: Quartering starboard bow view of the "Pilhasca" on trial run. Below: Engine room layout on the "Pilhasca" and "Sonya" is the same; F-M main and auxiliary Diesels.

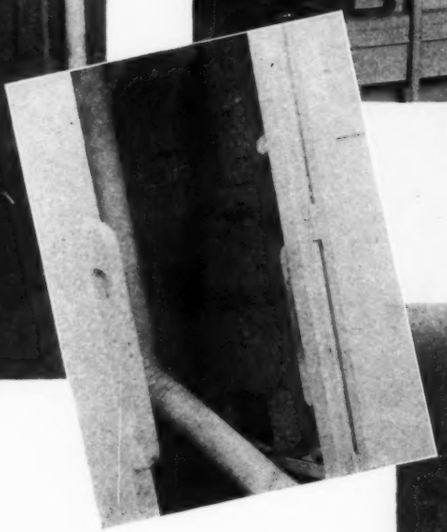




F-M Diesel auxiliary unit on the "Pilhasca" and "Sonya."



Lube oil storage tank and Michiana reclaimer on the "Pilhasca" and "Sonya."



Maxim exhaust silencer installation on the first two "Rye" Draggers.

View of chart table, alarm panel and switchboard in the pilot house of Bill John's Rye draggers.

single cylinder 10 hp. Diesel belted to a 1½ kw., 32 volt generator, a 21stage air compressor and 50 gpm. rotary service pump.

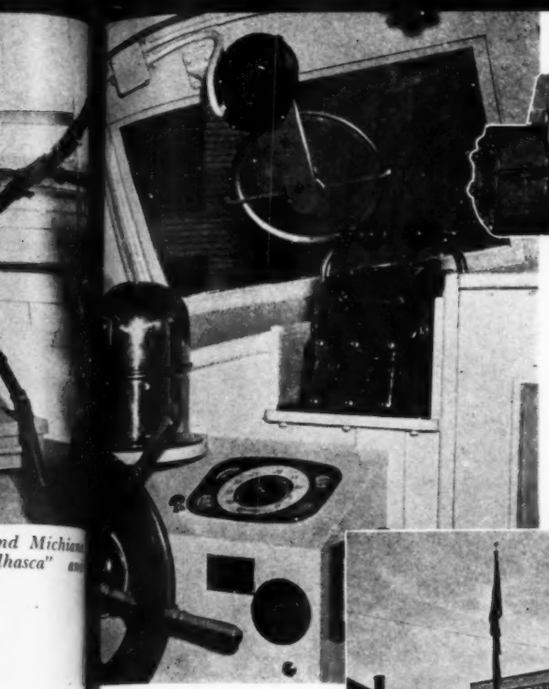
And then there is the *Princess*, just completed for Captain Gus Reiter of Greenport, Long Island. A little larger than the other two, she is 62 ft. 4 in. l.o.a., 8 ft. draft and 16 ft. 8 in. beam, of 44 gross tons and 27½ tons capacity. The *Princess* is powered with a Buda-Lanova, 6-cylinder, 170 hp. Diesel, turning a Federal Mogul 46 x 36 wheel through a Twin Disc 2:1 reduction gear. Her main engine is fitted with a Ross heat exchanger, Leece-Neville starting motor and generator, Purolator fuel filters and DeLuxe duplex lube filters, American-Bosch fuel injection and Rochester exhaust temperature gauges. The auxiliary is a Witte Diesel unit with a 2½ kw. generator and Maxim Silencer.

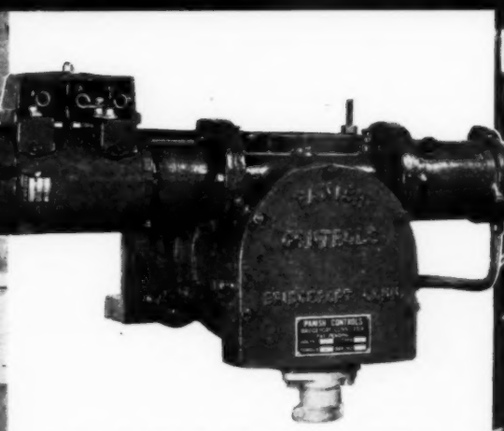
Now the exhaust system on the *Princess'* main engines embodies some unique features in which the Fluor air jacketed muffler is utilized to accomplish engine room ventilation. A large, open end duct extends over the engine and is interconnected with the exhaust pipe jacket and thence to the muffler jacket. The induced draft created in the muffler jacket withdraws the hot air rising from the engine and keeps the engine room at a comfortable temperature, free from fumes. On trial runs it was found that neither the exhaust connection jacket or muffler jacket were uncomfortable to the hand and exhaust sound was audible only as a low purr.

To put it another way the Fluor Air-Cooled Muffler breaks down and muffles pulsations of exhaust gases, exhaust and engine noises, by passing them through a series of perforated concentrice cylinders within the core of the muffler itself. An outer shell serves as an air jacket through which air is drawn along the entire axhaust system by the venturi action of the exhaust gas as it leaves the ejector cone and enters the stack. The muffler further serves as a ventilator by drawing off engine room air. By adding an air duct to the system, clean, warm air for heating purposes may be provided either in the engine room or in other parts of the vessel.

Common to equipment of all three of the yachtlike draggers are Kinney winch clutches and Hathaway fishing gear. Complete in all necessary detail without a scrap of excess baggage.

That is how Bill John and his Associates do their work. The finished product represents the finesse of years of yacht building experience adapted to the practical needs of utility craft reflecting also the splendid spirit of cooperation that pervades this organization.





This is the Panish reverse gear operating unit itself, a compact, self contained unit.

Above: This view shows a Panish triple engine control station on a 104 ft. armed rescue vessel. Left: Exterior of the Panish Controls plant.

Below—center: Closeup of the Panish twin engine control station.

t house view in a 45 ft. speed aircraft rescue el, showing installation of win engine Panish control on.

PANISH CONTROLS

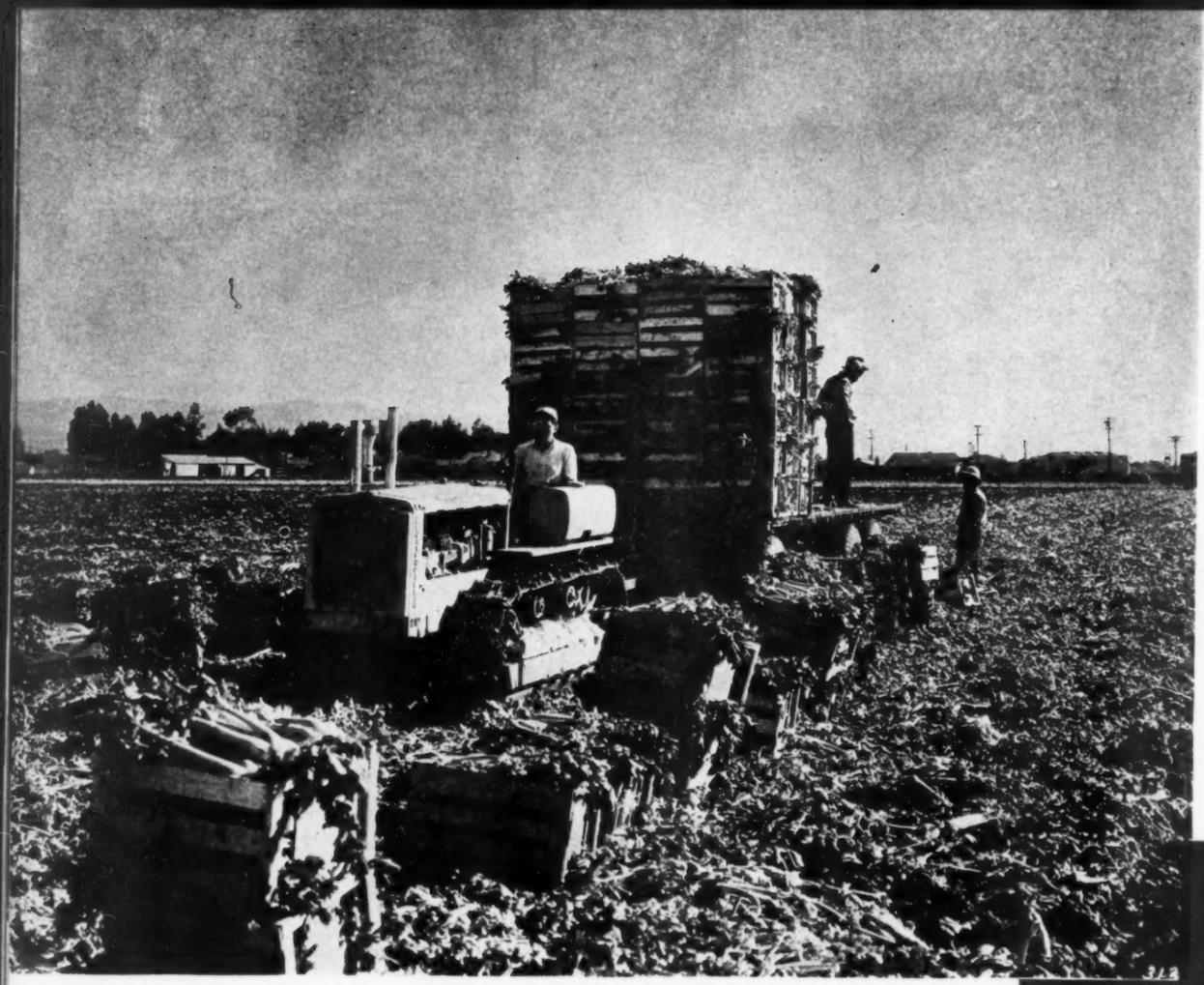
By REX W. WADMAN

BRIDGEPORT, Conn., Aug. 28—Because have heard so much about the Panish Remote Control System for reverse gear and throttle of Marine Engines as used extensively by the United States Coast Guard, United States Army-Transportation Corps, the United States Army Air Corps and also by the United States Navy, came up here today to learn more about these controls and find one of the best designed and built plants that I have been in for a long, long time. Clean as a hound's tooth, designed and equipped specifically for the job of making these controls, the Panish Plant is part of the answer why these controls are working so well in service.

In general, the Panish control unit is a compact, fully enclosed and electrically driven mechanism for operating any type reverse gear of any internal combustion marine engine, whether it be gasoline or Diesel. The operating principle of this control is technically known as "torque responsive switching." It employs no limit switches, slip clutches, overload clutches, solenoids, time fuses or other limiting devices, nor does it require any positive or negative pressures, liquids or other operating media. Yet I find that this unit will deliver to the operating shaft of the reverse gear any predetermined torque within the range for which it is designed.

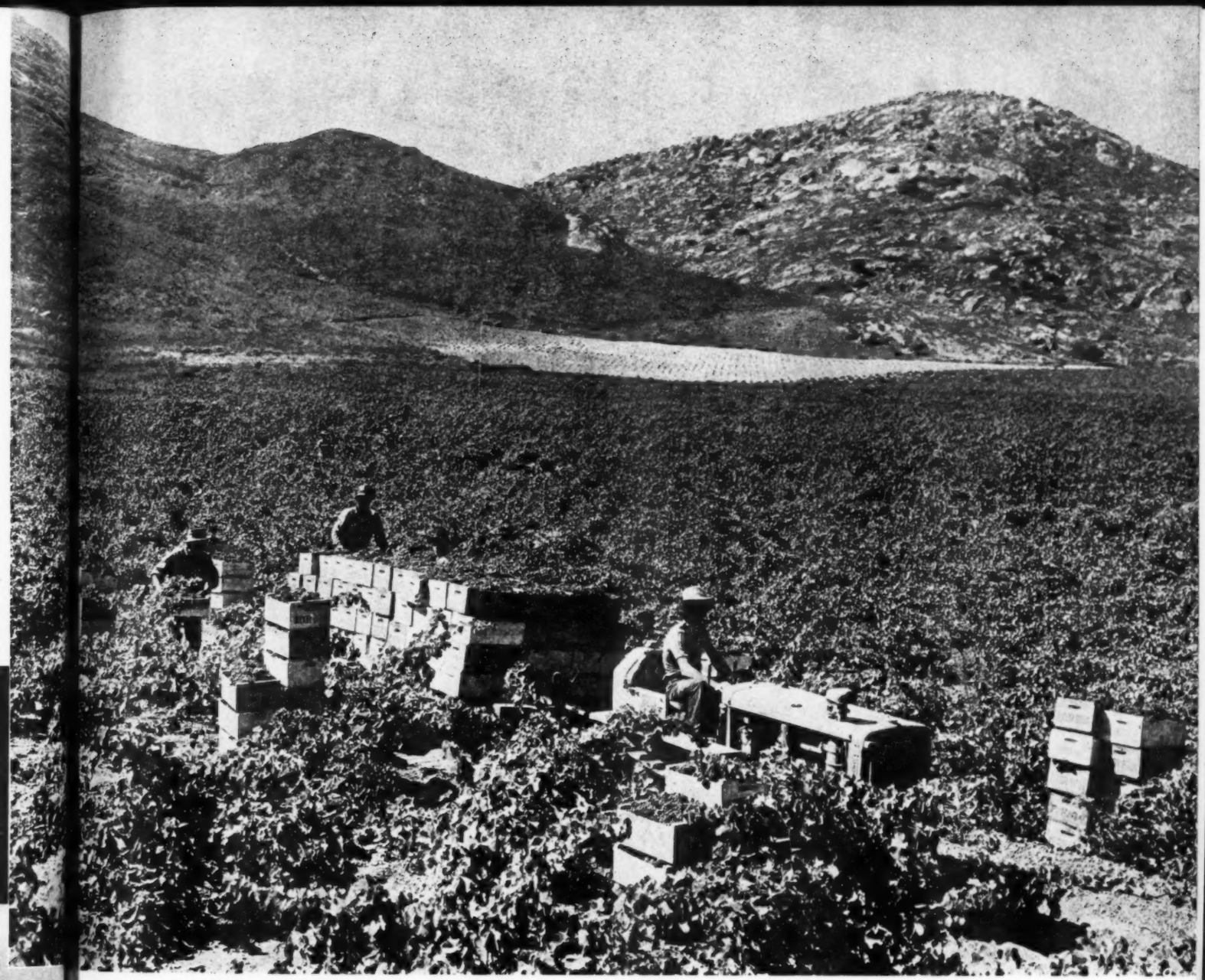
Since the torque output is limited to equal the maximum torque which may safely be applied to the operating shaft of the reverse gear, full overload protection is provided not only for the reverse gear itself but for the operating unit as well. At the same time, the troublesome effects of motor armature momentum have been completely eliminated. It can be said that the reverse gear is engaged in much the same manner as if done by hand with this difference, however, that the mechanical "hand" of the Panish unit always applies the same torque—the human element having been eliminated. The torque setting, once predetermined and established, cannot be changed by unauthorized persons and remains constant throughout the life of the unit. The torque output is not affected or changed by wear no matter how often it may be called upon to operate. It is equally immune to long periods of idleness. The predetermined torque output may be

. . . . *And now please turn to page 88* . . . .



This 400-acre celery patch near Salinas, California produces two crops a year. The Caterpillar Diesel tractor hauls the crop out at 300 crates per load.

Picking and husking the corn crop on the George Clark farm, near Lowell, Indiana with a general purpose Caterpillar Diesel "kitten."



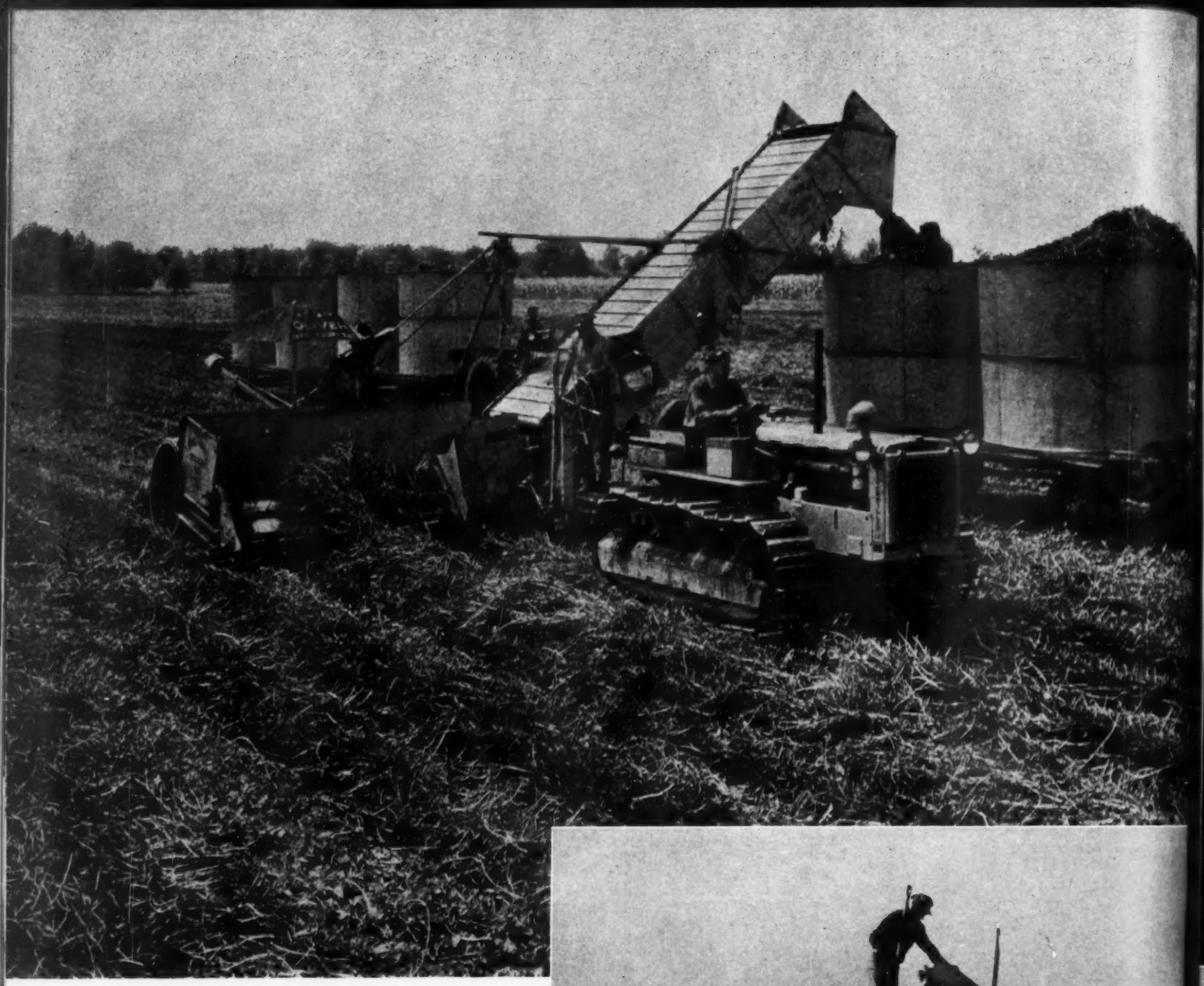
Another Caterpillar Diesel "kitten" hauling out a grape crop on the John Tudor ranch near Fontana, Southern California.

TREADING OUT THE NATION'S HARVEST

By JIM MEDFORD

ONE hundred thousand tons sounds heavy but when translated into 200,000,000 pounds of vegetables, it assumes such mountainous proportions that "colossal" is the word for it. But that's the amount of *just vegetables,* without the fruits, milk, meat, etc., that goes with a G. I. meal. And the overseas shipments from the nation's harvest are made up of 200 different crops—frozen, dehydrated and juiced for space-saving.

The Pacific Coast states—California, Oregon, Washington—are the closest to the food firing-line in the rapidly growing Pacific war theater. California's share was a billion-dollar crop. That's not hay, of which the Bear State pro-



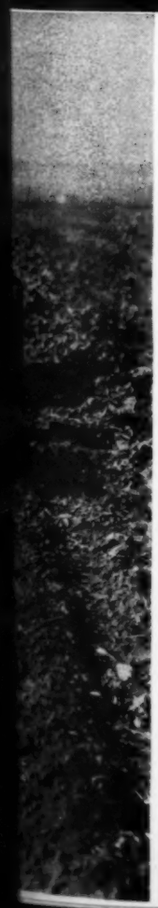
This, and another Caterpillar Diesel tractor work 8000 acres on the Hal Thoan place near North Judson, Indiana. In this view they are harvesting good old peppermint.

duced plenty, too. But the horses out there want "hay" rated in cetane numbers only.

What is true in the Coast states is also true of the other states of the Nation—east, west, north, they're all in there "pitching." But it's not all manpower; there's plenty of horsepower doing it's share, too. The Diesel kind. The kind that can do anything another engine can do, do it better, and at less cost with lower upkeep.

Out in front among these "doingest" harvesters, are the Diesels—the bosses of the Nation's bread basket—field, grove, vineyard, barnyard—the track-laying tractor.

Here a Caterpillar Diesel "kitten" is seen in the sugar cane harvest in Hawaii. It hauls 2½ tons to the load, all uphill.



Left: This view comes from Montana, showing a small Caterpillar Diesel harvesting sugar beets.

Right: And no harvest story would be complete without wheat which we see here being harvested in Kansas with a 12 foot combine hauled by a Caterpillar Diesel tractor.

SUPERVISING & OPERATING ENGINEERS' SECTION

"LOOKING FORWARD"

Conducted by R. L. GREGORY*

SINCE the last issue of DIESEL PROGRESS, in which the writer discussed the Diesel Engine and its future in the post-war era, several letters have been received by the writer relative to programs of power plant expansion and revamping. From these it is surprising to note the number of municipalities and industrial plants which are planning to either revamp or enlarge their power plants. And in most every case the Diesel Unit will play an important part.

All are beginning to recognize the feasibility of installing Diesel engines, particularly those plants which have been pressed to meet load demands during the last four or five years and whose space for installation is limited. Many plants have housing facilities capable to take care of the installation of one or two additional units of the Diesel type, while they cannot accommodate the installation of both steam units, additional boiler capacity and the attendant accessories.

Another matter which is in favor of the Diesel is the fact, that once manufacturers are able to release units to the industrial and municipal trade, since they are a compact unit in themselves, the time required for building and installation would be considerably shorter than if one had to install both prime mover, boilers, etc. as in the case of steam units. This is not a disparaging criticism of steam units. Each type of unit has its place in the power program.

But the plant that has been hard pressed to meet the load demands thrust upon it, and has just had capacity enough to "get by by the skin of its teeth" is anxious to relieve that situation by installing some sort of an economical unit, just as quickly as possible, said unit to be used as reserve and standby power, so that they can take their time in revamping their present plant and not be pressed for equipment to handle the load demand while the revamping program is in progress. It is true in several cases, that steam plants are now planning to install large Diesel units to use as standby and peak load equipment.

Another advantage of the Diesel unit is, that it is just as economical in operation, and since the requirements for the most part are for peak load and standby equipment, it will be operated only periodically, and being available on short notice it is highly advantageous.

Since the war things have changed. The government for the most part has purchased the entire output of most of the Diesel manufacturers. These units have been installed in many types of ships, and in land service which required rugged and positive operating units. The government inspectors and agencies purchasing these units as well, have insisted on perfect and economic performance of all units which they have purchased. As a result the Diesel manufacturers have had to be "On their toes" so to speak with the consequences that many changes have been in vogue, to improve and stabilize their products. These changes have for the greater part been in the line of improvement. If not they have been discarded.

Units of greater horsepower capacity have been developed. Along with this, limited space available for installation has forced them to so design the units that the weight per horsepower developed by these units has been materially decreased. This has been accomplished by shortening up the units, lessening the distance between cylinders, and at the same time increasing the bore and lengthening the piston stroke. Consequently when these units are released to the domestic trade, the customer will have the advantage of obtaining a power unit of greater capacity of rating which can be installed in a minimum of space.

For quick installation and economic operation, there seems to be an ever increasing demand for Diesel units. This, of course, applies to the average small municipal and industrial plant and does not imply that the large utilities whose load demand runs into millions of kilowatt hours per month, will follow this procedure. Of course many of the larger utilities do have isolated Diesel plants which they use for standby service and in some localities they use them entirely for communities requiring a limited amount of power generation within the capacity of Diesel unit range. During the war some Diesel manufacturers have designed and built successful operating units up to 7500 bhp.

How does this all affect us, you may ask. Well if yours happens to be one of the plants which is planning on postwar improvements, now is the time to get your survey made and find out what your requirements will be. After completion of your survey, plans should be made and the preliminary engineering accomplished and plans approved. Then the equipment should be ordered according to the specifications. In this manner you will be in line for the new equipment as your turn comes, and will not have to wait until your present equipment has reached a stage where revamping costs and load demand places you behind the proverbial eight ball. For from all indications there is bound to be a rush for new equipment, which will keep Diesel manufacturers as well as the manufacturers of accessories busy for many many months after all hostilities are wound up.

In a recent conversation with the superintendent of a firm manufacturing accessories such as pumps, heat exchangers and other parts vital to operating procedure, he informed me that his firm had enough domestic orders on hand at present, to keep every man in their present employ busy for two years after the end of the war, if they never received another order. These orders have been placed by far sighted superintendents and managers for delivery as soon as materials are again available to the general trade. They have been filed according to receiving dates and urgency and will go into production immediately upon the plant being released from war contracts. Therefore from such indications the demand upon Diesel and other power equipment manufacturers for their products will be such that unless you are prepared and in line with your orders you may be forced to wait many months before you can start revamping of your units and equipment.

---

* *Chief Engineer, Municipal Water and Light Plant, Hillsdale, Michigan.*

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- **MANUFACTURES all types of petroleum products in 10 modern refineries processing 90,000,000 barrels of crude oil annually.**
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- **DISTRIBUTES petroleum products through 2000 wholesale bulk plants which also service a network of many thousands of Sinclair Dealer stations.**
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Exchange Your Diesel Maintenance Ideas

The Necessity Of Oil Filters in Preventive Maintenance*

Conducted by R. L. GREGORY

WE have prepared this paper with the idea of interpreting a multitude of fleet operators' experiences with respect to the use of oil filters in Preventive Maintenance. All types of operation, both of large and small fleets, have been surveyed. Many of the findings are the result of research sponsored by the "Oil Filter Manufacturers Group" of which we are a member.

Preventive maintenance of automotive equipment in itself is hard to express in words. We define it as follows: "Preventive Maintenance is the practice of minimizing the possibility of serious motor failures through proper and timely servicing of equipment. We were asked recently, "Why not apply preventive maintenance towards the upkeep of equipment rather than waste critical material on oil filters?" It is our feeling that oil filters when properly used are second only to oil itself in the correct servicing of the lubricating system. This lubrication system in turn might be considered the most important unit of the entire engine. The use of oil filters when correctly serviced, must definitely then, be an important application of preventive maintenance. Most fleet operators have a regular schedule for the servicing of oil filters just as they have for clutch, tires, valves, bearings, etc. Their importance and necessity is evidenced in four obvious results: reduced engine wear, lengthened engine overhaul periods, reduced oil consumption, and easier overhaul jobs.

Reduced engine wear has always been important and is now even more so due to shortages of critical material and manpower. We mention a few of the critical parts whose lives are prolonged through the use of continuously clean oil. They are: pistons, piston rings, piston pins, piston pin bearings, connecting rod bearings, crankshafts, valves, valve guides, and valve seats. An oil filter-equipped-engine, due to the removal from the oil of dirt, gum, varnish, acids, etc., has far less wear of moving parts than one which is not equipped. Aside from the previously mentioned parts, there is also less wear on the clutch, transmission, tires, etc., due to proper operation of the engine and maintenance of power.

Lengthening the overhaul period is the natural result of the decreased wear on critical engine parts. It is now of great importance because it enables a fleet to "get by" with less manpower and fewer pieces of equipment. Less frequent oil changes are required due to the fact that dirt, sludge, varnish, carbon particles, metal particles, and a good share of the acids derived from products of combustion are removed from the oil. By keeping rings free, dilution is also cut down.

Oil consumption is decreased through keeping piston ring grooves free of gum, varnish, carbon, etc., which substances keep the rings from riding freely and evenly against the cylinder walls. The wiping action of the piston rings remains efficient since oil slots in the pistons do not clog so readily. Both gasoline and Diesel fuel can be saved since certain critical parts, such as valves, perform more efficiently when lubricated with a clean oil. Efficient operation of these parts makes better use of the fuel since efficiency is a measure of the output with respect to the input.

While oil filters are, I believe, generally accepted as an effective means of preventive maintenance, improper installation or operation can neutralize any possible benefits. Sloppy installations can result in accidents whereby valuable engines can be crippled. Careful supervision at the time of initial installation solves this problem.

In considering the type of operation, nothing can be tougher on a filter, or engine, than continuous starting and stopping of the engine. This usually results in a cold engine, thereby giving high dilution. Dilution in most cases ends with sludge and sludge ends up in the filter. Result: A very short element life. Long runs with few stops keep the engine hot, more complete combustion is obtained, thereby less dilution and sludge; the oil passes more rapidly through the filter and in the absence of sludge the oil can be thoroughly cleaned of all contamination. A hot engine also has the tendency to evaporate any traces of dilution and evacuate it through the breather. Operation in cold climates offers the same problems which we have discussed in "stop-start" schedules.

The period between element changes is therefore governed by the combination of these conditions just discussed. Experience will usually indicate this period for any given group of equipment. Oil analysis can set the time definitely, but a series of test runs is usually satisfactory. The size of the filter used will in a measure control both element and oil life. The larger the filter, the better the results. Installations of undersize units are of questionable value.

We have discussed the necessity of oil filters in preventive maintenance as well as the problems encountered in their operation. We would now like to list a few examples of actual results.

In 1940, 330 truck fleet operators with 47,000 trucks were asked, "To what extent do oil filters increase oil life?" The answer, 186% (average). The same truck operators report: "Oil filters extend oil change intervals from 1,235 miles (average) without filters to 4,551 miles (average) with filters.

One large fleet operating on long, hot runs changes elements every 10,000 miles. If the oil turns dark before this period, the vehicle is taken from the road and thoroughly checked. This procedure has eliminated many possible road failures. Diesel equipment under the same management runs 3,000 miles per element change. Another concern reported, "We operate vehicles 200,000 miles and more since using filters before being obliged to rebore, as compared to 60,000-100,000 miles without filters." Still another report says, "Oil filters have reduced motor overhaul jobs at least 50% and where overhauling is necessary, it only costs 40% as much as before."

In conclusion we want to stress the fact that while oil filters are invaluable in the application of preventive maintenance, they are not a magic device which solves and corrects all lubrication problems.

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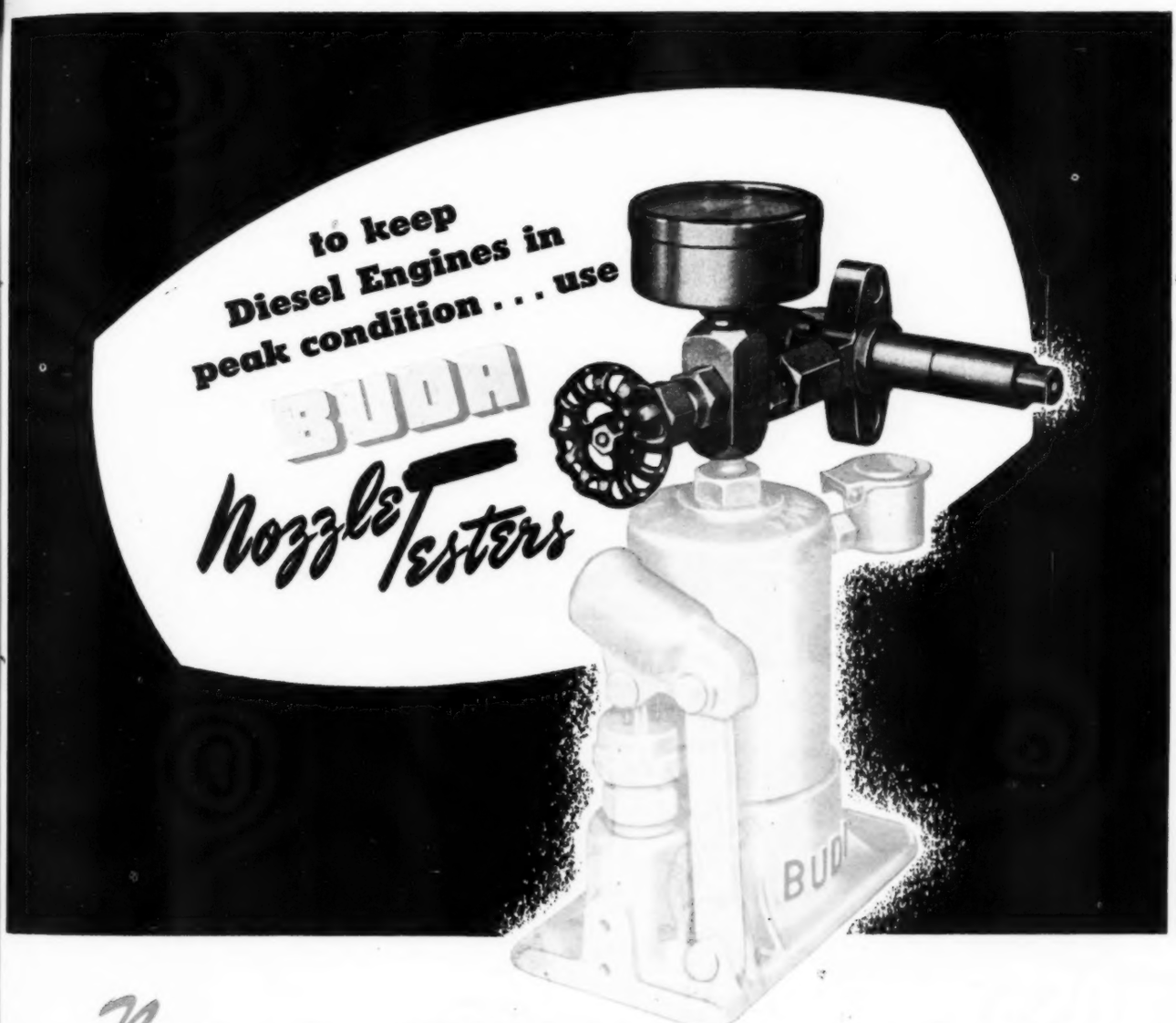
* *Excerpts from a paper by W. G. Nostrand, Chief Engineer, and L. L. More, Factory Manager, Winslow Engineering Company.*



Nozzles on all standard Diesel engines are easily tested for correct and uniform opening pressure . . . . leaky valves . . . spray patterns . . . dribbling nozzles . . . clogged nozzles, etc., with the BUDA Hydraulic Diesel Nozzle Tester.

Any mechanic can test, clean, adjust and reset Diesel injectors, right on the job, in a few minutes with this handy, portable, precision instrument.

A complete "laboratory," the portable BUDA Nozzle Tester, only 10½ inches high, comes with all necessary attachments and instructions in a sturdy all metal carrying case.

This instrument is more than just a Nozzle Tester. The Model B can be used for testing various types of hydraulic devices or systems.

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Engines

New Fuel Oil Filter Announced

BRIGGS Clarifier Company has an improved standard line of round tank fuel oil filters for Diesel engines. These new DFR models have been added so that flow capacities range up to 500 gph. For small, high-speed Diesel engines, where pressure sometimes runs well above 50 lb. per sq. in. the clarifier is designed for a maximum working pressure of 100 lb. per sq. in. and is hydrostatically tested at 150 lb. per sq. in. For large, heavy-duty Diesels, where pressure is usually between 15 and 25 lb. per sq. in., the maximum working pressure is 40 lb. per sq. in., and clarifiers are hydrostatically tested at 60 lb. per sq. in. Pressure drop across the refills ranges from 0 to ' lb. per sq. in. on all models.

On the larger models of this series provision is made for registering pressure differential across the refill cartridges. This is accomplished by installing one gage in the upper compartment of the tank and another in the lower compartment. A glance tells the operator the exact pressure differential and when to change refills.

Thomas W. Moss Appointed Pedrick Detroit Representative

THE Wilkening Manufacturing Co. announce the appointment of Thomas W. Moss as De troit representative. Mr. Moss succeeds M Warren K. Lee who is now Factory Manage at Wilkening headquarters.

T. W. Moss

Tom Moss has been in the automotive industr since 1916. He has had extensive experience i production, distribution, merchandising an service. Not only has he had important con nections with manufacturers such as Chevrolet Pontiac, General Motors of Canada an Chrysler, but he also operated his own ind pendent repair shop in Buffalo in 1925-26 an his own automobile agency in Asheville, N. C in 1940-41.

From 1934 to 1938, Mr. Moss was General Serv ice Manager of Chrysler Corp. In 1939-40 h was Director of Truck Sales for the Dodg Bros. Div. of Chrysler. Most recently, he ha been with the War Production Board in variou capacities both in Washington and Detroit, 9 months of which was as assistant to the Director General of Operations.

Seamless Tube Data Book By Seamless Steel Tube Institute

THIS new book on tubing is divided into four principal sections, with guide index, covering General Data – Mechanical Tubing – Pressure Tubing–and Reference Tables. Under General Data–there is a brief summary on the history manufacture, tests, special shapes and standard steels with chemical composition, mill practices etc. The section on Mechanical Tubing covers information on typical uses, suggestions of how to obtain best results through the use of tub

ing, determining proper size, with complete tolerance tables, properties for beams, and a digest of standard specifications.

The section on Pressure Tubing covers various pressure formulae, specifications and tolerance tables for boiler tubes, heat exchanger and condenser tubing, still tubes, alloy steel pipe, stainless steel analyses, with metallurgical data.

The Reference Table section is unusually extensive with many formulae, weight tables for rounds, squares, rectangles, surface areas both inside and outside, and other tables commonly found useful in tubing applications. This is the most complete volume on this subject issued for many years. Supplementary sheets with new data will be supplied from time to time. The book sells for $2.50 and may be ordered from the Seamless Tube Institute, Pittsburgh 19, Pa.

Penflex Announces New Bulletin

PENNSYLVANIA Flexible Metallic Tubing Co. announce Flexible Metallic Interlocked Hose, a new 12-page bulletin. Latest engineering data and other pertinent information about Penflex Galvanized Steel Hose and Bronze Steam Hose with couplings. Illustrated. A copy of this bulletin will be mailed on request to the company at 72nd Street and Powers Lane, Philadelphia, Pa.

Panish Controls, *Continued from p. 7*

changed by authorized persons in a few minutes without requiring removal of the unit from where it is installed, but once changed, the torque cannot be tampered with by anyone else.

Due to the complete elimination of limit switches, no adjustment of any kind is needed or provided for the end positions of ahead or astern. Yet, the unit will positively and fully engage the clutch no matter how small or how great the operating angle of the operating shaft may be. By the same token, the unit will automatically compensate for any change in the angle of throw of the reverse gear shaft. Any wear or readjustment of the reverse gear tending to change its operating angle are automatically compensated for by the mechanism.

As soon as the control unit has moved the reverse gear into either ahead or astern position the torque applied to the operating shaft of the reverse gear is instantly and automatically removed and it is impossible to wear or burn out the thrust bearing of the reverse gear yoke.

This automatic release of the clutch engaging load takes place every time the unit is called upon to operate irrespective of whether the reverse gear has been fully engaged or not. This exclusive feature of the Panish Control Unit once and for all eliminates burned out clutch plates, reverse bands and clutch thrust bearings.

Another important feature of the Panish Control Unit is that it is permanently coupled to the operating shaft of the reverse gear by a solid or universal type of coupling or it may be connected by levers and links or chains or gears. No matter what type of coupling method is used, however, the output shaft of the unit is permanently and solidly connected to the reverse gear shaft. In order to operate the reverse gear by hand for any reason whatever it is not necessary to uncouple the control unit from the reverse gear, nor are any other preparatory steps needed to make the unit of reverse gear ready for hand operation, with the exception of switching off the electrical control circuits. This unit is always ready for instant

taneous hand operation, there is nothing to be done but to operate the hand lever which may be attached to the opposite (inboard) end of the reverse gear shaft.

This unique feature is not only of prime importance on combat vessels in case of damage to the electrical system or power supply outage, but it also presents many advantages when "taking up" the reverse gear for correct loading. The adjustments may be tested by hand or by power at any time, whether the engines are running or not. Furthermore, due to the automatically limited torque output of this control, any adjustment which is too tight will be rejected by the power unit by refusing to overload the reverse gear mechanism. Thus the Panish control automatically assists in adjusting the reverse gear for proper loading in the ahead and astern positions.

The speed of operation astounded me. The time required to go from stop to ahead or from stop to astern is approximately one-fifth of a second and operation from full ahead to full astern, or vice versa, did not exceed one second. Slipping and consequent wear and tear on the clutches is eliminated.

From the safety standpoint each remote control station is equipped with signal buzzers. These buzzers function exactly in the same fashion as the standard engine telegraph system. Each time the pilot executes a maneuver at the remote control point, the signal buzzer acknowledges the maneuver from the engine room. In other words, the buzzer signal audibly advises the pilot when the reverse gear is fully engaged and the length or duration of the signal corresponds exactly to the time required to engage or disengage the reverse gear.

Should the battery voltage fall below the safe operating level, this buzzer will continue to ring with a steady ring. On the other hand, should the reverse gear refuse to be fully engaged due to an obstruction or faulty adjustment, the buzzer signal will then warn the operator by a persistent interrupted ringing. In such cases all control circuits are switched off manually by a handy switch at the remote control station, and hand operation may be resorted to until the trouble has been eliminated.

Normally, the Panish Control Station is located on the navigating bridge. For single engined vessels this control station has one control lever and for twin, triple or quadruple engined vessels two, three or four such levers are mounted on one single control station.

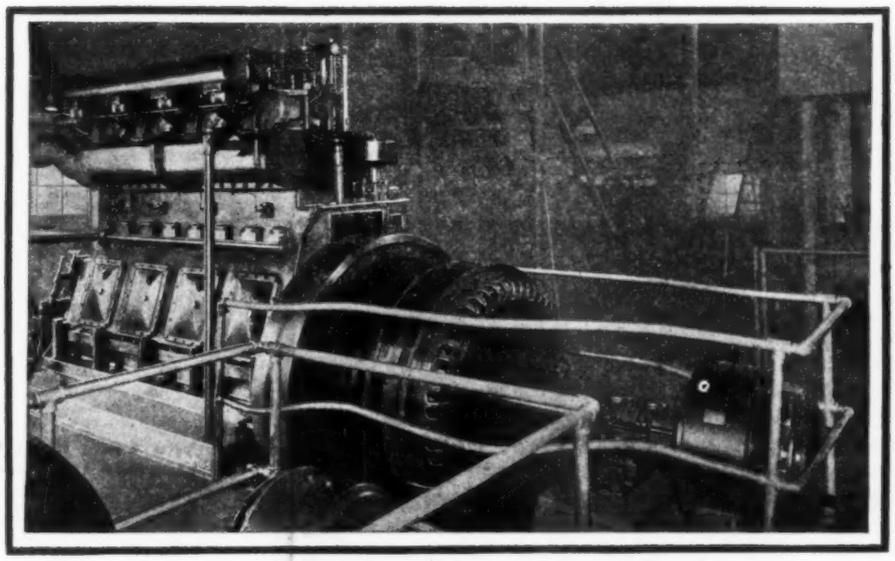
In the stop position, the control levers normally take a vertical position central between the ahead and astern positions. Both the reverse gear and throttle of one engine are operated by each single lever. Operating this lever in forward direction towards the ship's head will first cause the reverse gear to be engaged for ahead operation of the propeller and further movement will open the throttle.

The control lever is temporarily arrested in the ahead and astern switching positions by roller locks, the tension of which is adjustable to suit the pilot. Moving the control lever within the range of the roller locks will operate the reverse gear, but no throttle movement takes place.

Operating the control lever beyond the ahead or astern switching positions will then open the throttle.

On all multiple-engine control stations the operating levers are so arranged that the pilot can

LET'S LOOK AT THE RECORD...



In 10 Years This Worthington Diesel Delivered 8,511,660 KW. HRS. — Running 96.5% of Elapsed Time On Toughest Oil Field Service

Performance of Worthington Diesels under some of the severest service conditions in Industry . . . is a good indication of how they will perform in your plant.

For instance, this 4-cycle, heavy-duty engine furnished power for motor-driven water pumps repressuring oil wells, and for two or three 25/65 hp. motors usually used on drilling rigs . . . during 10 record years in Bradford, Pennsylvania. Resold, it is still giving satisfactory service today.

For full details, write for Bulletin RP–203, a reprint of an article in a leading Diesel publication.

HANDY GUIDE TO DIESEL COSTS AND APPLICATIONS

Send also for "Diesel Engines", an informative discussion by a Worthington engineer. It describes how to estimate costs of different types of power . . . gives facts on Diesel power progress and applications, on pipe lines, in water works, for refrigeration, air conditioning and general industrial service. Ask for Bulletin WG1–74.

Worthington Pump and Machinery Corporation, Harrison, N. J.

Ten-Year "Box Score" of a Worthington Engine

Total KW. hrs. generated.	8,511,660
Running-engine-capacity factor . . .	55.0%
KW. hrs. per gal. fuel	11.7
Rated engine hp.per gal. lubricating oil	2064
Total 10-year cost of engine repairs .	$708.00
Average liner wear per 10,000 hrs.	15/10,000 inches

Total 10-year cost of generating power, including labor, fuel oil, lubricating oil, repairs and supplies, interest, amortization, overhead, taxes and insurance . . . *9.68 mills per KW. hr.*

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WORTHINGTON-BUILT AUXILIARIES

Evaporative Type Engine Water Cooler

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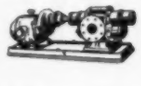


Diesel engines, 150 to 2,600 hp. . . . gas engines, 175 to 2,880 hp. . . . convertible fuel engines, 150 to 1,720 hp.

always control two engines simultaneously by one hand in any direction.

The station may be mounted next to the compass without magnetic interference or the need of compensating.

It is possible to install a series of these Panish Controls on a vessel, when it is necessary to have more than one control point.

I would like to go into the details of how this Panish Control unit accomplishes its very satisfactory results, but for the time being these details are known as military secrets. But I can say that its operating principle is surprisingly simple and as foolproof as I have ever seen. Every possible contingency has been thought of and controlled. It is a matter of record that Panish Controls have rendered, and are rendering, a very good account of themselves in the most severe of all service—in combat vessels of the Coast Guard, of the Army and of the Navy. It is also significant of the "Panish" way of doing things that this control system went through its development stages long before the war started. The system was subjected by Panish to the most severe tests on his own cruiser before it was submitted to the even more searching government tests. Thus it is more than a war development and as we go into peacetime operations I think many owners of both pleasure and commercial boats will find that Panish Controls are a big advance in automatic clutch and throttle control of one or more engines from a remote point, such as the navigating bridge.

You may have read the article in our September issue on the new Sterling Viking Diesel. This new Diesel is fitted with the Panish Control as standard equipment. I am satisfied that other engine builders will follow Sterling's example in the near future.

New Long Bent Corrugated Flexible Connectors

LARGE diameter flexible corrugated stainless steel tubing is now being manufactured in long bent lengths. Pictured below are two 16 in. diameter by 9 ft. Diesel exhaust connectors bent to 110° for an important war use.

Extensively used on Diesel engine exhaust and high temperature vapor lines, these connectors have inherent advantages of value to the chemical, power and petroleum industries. It remains only to apply this development to existing problems in these fields.

The connectors absorb expansion, contraction and extreme deflection in all planes. Supplied in sizes 6 in. diameter and larger in carbon steel, any type of stainless steel and other corrosive-resistant alloys, they require no packing and, having no seams, are permanently gas tight. The connectors handle corrosive liquids and gases under pressures up to 30 p.s.i. and at temperatures from sub-zero to 1800°F. Connectors for absorbing linear expansion only can be furnished for pressures up to 300 p.s.i. For further information, write to Zallea Brothers, Johnson, Wilmington 99, Delaware.

Wilson Named Marine Division Manager for Westinghouse Government Office

C. S. WEBER, manager of the Washington Government Office for the Westinghouse Electric and Manufacturing Company, has announced the appointment of Richard M. Wilson as manager of the Marine Division of the Government Office. Born in Wilmington, Del., in 1913, Mr. Wilson was educated at Lehigh University, where he took his bachelor of science degree in mechanical engineering, graduating in 1935. He joined Westinghouse in 1936, at which time he signed up for the Westinghouse student course. In 1938 Mr. Wilson went to the Westinghouse Government office.

New Type Voltage Regulator Announced

A NEW, improved voltage regulator, the E-M *Synchrostat*, is announced by the Electric Machinery Mfg. Company. Designed for use with a-c electric generators using direct-connected, belted or motor-driven exciters, 50-60 cycles standard, the regulator consists of a basic, metal enclosed unit adaptable for regular generator switchboard mounting, and for mounting-on top-of-the-generator in "packaged" power units.

Voltage regulation of the *Synchrostat* is plus or minus 2%; the regulator quickly responds to load changes to restore generator voltage to normal. The regulator is of the synchronous contact type; vibrating tungsten contacts of regulator relay operate every half cycle of the a-c wave (120 times a second for 60 cycles) to insert and to remove a resistance in the shunt field circuit of the generator exciter. Regulating action is obtained by the relative time interval the relay contacts are open or closed; the time interval being determined by the voltage from the generator on the regulator relay coil. Regulator operation is unaffected by reasonable external vibration, making it highly suitable for mounting directly on the generator.

The regulator employs a new "swing-door" construction where all operating parts are mounted on the back of the hinged door for ease of inspection, with convenient regulator controls on the door front. Long life of the relay contacts is assured by an automatic contact-polarity-reversing switch; a damping transformer supplies a "biasing" effect across the relay coil, essential in producing stable, accurate voltage regulation.

No accurate fitting is required for switchboard panel installation of the regulator because of the semi-flush mounting feature. In the generator mounted model (see illustration) the regulator unit is assembled in a compact NEMA Class 1 enclosure which includes flush type A-C ammeter and A-C voltmeter.

(Official
Navy Photograph)

Positive Maneuvering Control

—from Pilothouse—Log Desk or Engine Room

In this new class of U. S. Navy Harbor Tugs, powered with two reversing engines, all maneuvering operations are governed by the magic of air.

Complete remote control of the speed and maneuvering of the two engines can be handled from either the Pilothouse or Log Desk stand (illustrated), and local control of each engine from a Controlair on the engine itself.

Starting, reversing, and stopping are all governed from any station by a single Controlair lever. Any desired engine speed is maintained automatically. Interlocks assure proper cam location before starting, and protective features make flash reversals possible without danger of damage. Verniers permit balancing of load. A pneumatic propeller shaft brake is automatically applied when reversing or stopping. Either engine may be cut out, permitting one-engine drive while the second engine is used for auxiliary purposes.

If you're thinking about tugs, or similar craft, for current or post-war use, you'll find some helpful information on W·A·B Controls in our Bulletin IDA-9471-2. May we send you a copy?

Westinghouse Air Brake Company
MARINE DIVISION
General Offices: Wilmerding, Pa.

75 Years of Pioneering 1869 1944

W·A·B

Pneumatic • Pneumatic-Electric • Pneumatic-Hydraulic

remote control systems

An actual size, die-cut bulletin is available. Request publication 176. Address Electric Machinery Mfg. Company, Minneapolis, Minn.

New High Pressure Rotary Pump

A NEW pumping unit capable of discharge pressures of 500 psi. has been designed and put into production by the Blackmer Pump Company, Grand Rapids, Michigan, according to information released by J. B. Trotman, General Sales Manager of the company.

These new pumps are built in all iron and bronze fitted constructions. Rated capacities 50 and 90 gpm. for discharge pressures to 500 psi. Standard motors with separate gear reduction or gearhead motors may be used. Units are also available for engine drive. While current production is entirely on the 50 and 90 gpm. sizes, it is planned that large capacities will be available later.

This is the first standard pump for pressure greater than 300 psi. to be added to the Blackmer line, and is the result of extensive development work which has been carried on over the past two years. Several of the new units have been furnished for pumping oils of various types, and they are designed for handing similar liquids having lubricating properties.

The new pumps employ the "bucket design" (swinging vane) principle, the same as used in practically all of the standard Blackmer pumps. The casing and working parts are, of course, heavier to withstand the higher pressure.

Mack Appoints J. A. Bascle Jr. District Manager

APPOINTMENT of J. A. Bascle, Jr. as district manager for the Louisiana, Mississippi and southern Alabama area has been announced by F. F. Staniford, president of Mack-International Motor Truck Corp.

J. A. Bascle, Jr.

Since 1941 Mr. Bascle had served the company as a salesman for Mack marine engines in the New Orleans territory. In this capacity he established the New Orleans branch as one of Mack's leading outlets for marine engine sales.

His interest in automotive and marine engine activities is of long standing, embracing experience ranging from practical mechanic to owner of his own automotive sales and service organization. At the present time he is an active member of the New Orleans Power Boat Association and a director of the Louisiana Motor Transport Association.

STANDING BY
FOR RESCUE DUTY

From the North Atlantic to the South Pacific . . . wherever there is sea action . . . the Navy's big, powerful rescue vessels are standing by to dash to the aid of disabled warships. Already, they have saved thousands of tons of fighting craft from falling into enemy hands and from intentional scuttling. After the war, they will be salvaging sunken ships from the seven seas. Scores of these rescue vessels have been delivered by Levingston and still more are under construction to help speed the day of victory when we can again devote our entire facilities to private enterprise.

Levingston

SHIPBUILDING COMPANY

ORANGE TEXAS

Fairbanks, Morse & Co., Buys Pomona Pump Division

FAIRBANKS, Morse & Co., has purchased the Pomona Pump Company, a division of Joshua Hendy Iron Works in a $4,000,000 transaction. Announcements of the sale were made simultaneously in Chicago by R. H. Morse, Jr., general sales manager of Fairbanks-Morse, and in Sunnyvale, California by Charles E. Moore, president of the Joshua Hendy Company. The sale was effective as of Sept. 2.

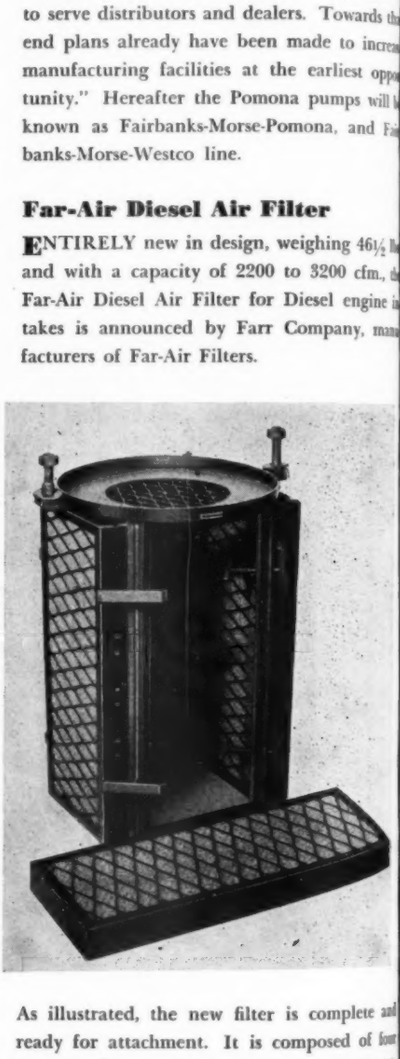
All physical assets, patents and trade-marks of the Pomona and Westco pump lines were included in the transaction. The Pomona firm has plants in Pomona, California and St. Louis, and has been doing approximately 7 to 8 million dollars worth of business annually. With acquisition of this line, Fairbanks-Morse becomes the world's largest manufacturer of turbine pumps.

No changes in personnel are contemplated and, according to Morse, Arnold G. Brown, general sales manager of the Pomona company, becomes assistant manager of the Fairbanks-Morse Pump Division in charge of Pomona and Westco products. Distribution and sales will continue under Brown's direction.

In announcing the purchase, Morse said: "Fairbanks, Morse & Co., recognizes its responsibility to serve distributors and dealers. Towards this end plans already have been made to increase manufacturing facilities at the earliest opportunity." Hereafter the Pomona pumps will be known as Fairbanks-Morse-Pomona, and Fairbanks-Morse-Westco line.

Far-Air Diesel Air Filter

ENTIRELY new in design, weighing 46½ lbs. and with a capacity of 2200 to 3200 cfm., the Far-Air Diesel Air Filter for Diesel engine intakes is announced by Farr Company, manufacturers of Far-Air Filters.



As illustrated, the new filter is complete and ready for attachment. It is composed of four separate filter panels of characteristic Far-Air design—herringbone channelled fine wire screen—and 2⅛ inches thick. They are mounted with spring clips on a steel frame, permitting easy removal for cleaning or changing while the unit is in normal operation.

Detailed specifications are as follows—
Capacity—2200 cfm. to 3200 cfm.
Air Velocity—435 fpm. to 635 fpm.
Static Pressure (Clean)—0.15 in. to 0.29 in.
Overall size—14 in. x 14 in. x 22⅜ in.
Weight—complete unit—46½ pounds
Weight—less filters—18½ pounds

ter size—8¾ in. x 22 in. x 2⅛ in. (actual)

her sizes or capacities can be furnished. Full formation is available upon inquiry addressed Farr Company, 2615 Southwest Drive, Los geles 43, California.

laska Railroad

. . . *Continued from page 57* . . . .

ween Whittier and Anchorage will make the with no stops for water or fuel and for aning the fire box, all of which was neces- when steam locomotives were used."

the initial run there were a number of vernment and Railroad officials, including g. Gen. Frank L. Whittaker, Deputy Com- nder of the Alaskan Department, and his ff; Colonel Ohlson and many of his depart- nt heads, including W. L. Kinsell, Superin- dent of Motive Power; Harry Dout, General reman of the shops; W. P. Lindsay, in charge gas engines and Diesel engines; George W. lwell, Chief Engineer of the Maintenance- Way, and many others. Mr. Colwell in mak- this trip marked the thirtieth anniversary his arrival in Alaska with the original rail- d gang.

ere you have it—a real "job of work" to be e and Diesels are doing it better, and don't get they will be running this winter in tem- ratures as low as minus 60 degrees and snow- s of 20 feet and more. The two 1000 hp. esel locomotives were built at the Schenectady nt of the American Locomotive Company. ey were towed from there May 2, across ntry arriving at Seattle May 15. They left ttle as super cargo on the U. S. Army Trans- rt, S. S. MacKinsey and arrived at Whittier e 6. One June 12 they went into service. t going and good work!

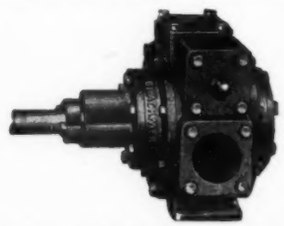
ew Engine Bearing Manual

LAWSON & BALS, Inc., has announced a w Engine Bearing Manual. It is published marily for the mechanics who actually serv- engine bearings but is also of interest and ue to all who are in any way concerned with omotive engine maintenance. Ninety-six es in length, it contains the needed informa- n to assure correct selection and installation bearings. It is profusely illustrated. A unique ture of the manual is the inclusion of tables wing crankshaft and bearing dimensions, erances, and oil clearances for all makes of s, trucks, buses and tractors. A copy may be tained free by writing Clawson & Bals, Inc., 01 West Lake Street, Chicago 44, Ill.

New Blackmer 50-90 Gallon Truck Pumps

TWO new truck pumps, in capacities of 50 and 90 gpm. have recently been put into production by Blackmer Pump Company.

While these new pumps differ in appearance and in certain details of construction from the present model the bucket design swinging vane principle of operation that characterizes all Blackmer pumps is used. The outstanding construction feature appears to be the double antifriction bearings—one on either side of the rotor—this bearing construction should virtually eliminate shaft "whip" and distortion. The action of the buckets (swinging vanes) prevents loss of capacity during the life of the buckets which may easily be replaced when worn.



Blackmer 50-90 Gallon Truck Pump

These new Blackmer truck pumps are compact and light in weight, are designed for standard power take off drive, and will deliver their rated capacity at 460 rpm. A Blackmer designed relief valve is built into the pump casing and will bypass the entire capacity of the pump without end thrust on the working parts. Suction and discharge connections will be furnished for either 1½" or 2" iron pipe and if desired the Blackmer Ezy-Kleen "T" type strainer can be mounted at the suction of the pump or at a convenient point in the suction line, remote from the pump.

Borg-Warner Officials Consider Problem of Discharged Service Men and Women

INDUSTRY'S responsibility to help discharged service men and women readjust themselves to productive civil life was recognized by a recent meeting of 50 Borg-Warner officials, division executives, and key men.

Their realistic move to cope with one of war's complex challenges—the psychological and physical readjustment of returned veterans to life on the job and in the community—was launched by representatives of twenty factories as widely-dispersed as New Castle, Ind., and Ithaca, N. Y., who pooled and analyzed actual plant experiences.

Illinois, Indiana, Michigan, New York, Ohio,

and Wisconsin plants, part of which are established in populous centers and the remainder in smaller communities, were represented in the meeting. The frontal attack on what may grow into America's No. 1 postwar undertaking attracted other industrialists to the study conference. These included Lee Roark, managing director Peoria Employers' Association and industry member of the War Labor Board, Chicago region; Dr. Ralph Vonachen, medical director and employment specialist, Caterpillar Tractor Co., Peoria; Harvey Ellerd, vice president and industrial relations director, Armour & Co.; Lt. Com. C. R. Brick, district civil readjustment officer, Ninth Naval district; Lt. William Bishop, U. S. Navy liaison officer to the Veterans Employment Service, and James P. Ringley of Commonwealth Edison Co., an American Legion leader.

The meeting, in the words of C. S. Davis, Borg-Warner president, evidenced "Borg-Warner's realization of the magnitude of the job of providing returned veterans with work they are equipped to handle at the time of discharge—a responsibility that looms larger and more complex as the war moves nearer to a decision.

"We know," he added, "that only through intense study and advance preparation can Borg-Warner do its share in reemploying former employees upon their return from war service."

While future plans contemplate the adoption of a few general rules of re-employment it is understood that each Borg-Warner division will adapt its planning to the special needs of its community.

Arch Campbell to Represent Detroit Diesel Div. In The Oil Fields

MR. W. T. CROWE, General Manager, Detroit Diesel Engine Division announces the opening in Tulsa, Oklahoma of a branch office from which will be handled the distribution of General Motors Diesel engines in the petroleum industry.

Arch F. Campbell

Arch F. Campbell of Tulsa will manage the sale of the products of Detroit Diesel Engine Division in this field. Mr. Campbell is well known throughout the petroleum equipment field. Following his graduation from the University of Michigan and his experience as a flying officer in World War I, he has served as Branch Manager of the Waukesha Motor Company, Sales Manager of the Superior Engine Division of National Supply, and more recently with

lark Bros. Company, Incorporated, Division Dresser Industries.

eneral Motors has developed multiple engine mbinations for the Armed Forces which pro- de important savings in weight and space. hese light, compact power units should be special interest to oil company executives d drilling contractors, and they should have de application in this industry as well as in ny other fields.

eneral Controls New York ranch Moves to New and arger Quarters

HE New York Factory Branch of General ntrols, manufacturers of automatic pressure, mperature and flow controls, has occupied w and larger quarters in the Architects Build- g, 101 Park Ave., New York City, in charge Branch Manager John Hammond.

John Hammond

n Hammond has had nine years of experi- e in the Controls business on the Atlantic board. As salesman, sales engineer, and nch manager, he has installed control sys- ns from Richmond to Boston. At war's start, took an active part in General Controls Co.'s neer work in the application of hi-g auto- tic shut-off valves to aircraft uses.

line with General Controls' expansion pro- m, the Cleveland Branch also moved into w quarters recently at 3224 Euclid Avenue, eveland, Ohio, with Branch Manager L. E. Rusty") Wetzell in charge.

Says Post-War Merchant Fleet Is Basis of National Security

IN A plea for the preservation of a strong merchant fleet after the war, Douglas P. Falconer, executive director of United Seamen's Service, told members of the Propeller Club at a luncheon at the Waldorf Astoria Hotel today (Wednesday, Aug. 9 at 12:30 p.m.) that compelling factors of post-war economic and national security lie in the keels of ships flying the American flag.

Emphasizing that the nation's shipping is one of its most vital industries, the head of the Service which operates 118 medical, residence, recreation and personal service facilities throughout the world for American merchant seamen, declared that he foresaw a re-awakening of this country as a maritime nation and a return to the glory of the days when American sailing ships dominated the seven seas.

With the ships, the know-how of management, the skill and high morale of merchant sea and a war record unexcelled by any nation, it would be national folly, Mr. coner said, to allow our merchant fleet "to in our rivers" as we did after World W

He added that merchant seamen are gro more concerned as to their future in the war years and are urging that the facilitie United Seamen's Service be maintained them after peace is declared.

New Sensory Torque Wrench

THE P. A. Sturtevant Co. announces Sturtevant Sensory Torque Wrench which report to be the culmination of seven yea extensive research—a wrench that in u faster than thought, still a true perman accurate Sturtevant Torque Wrench tha stand all ordinary shop abuse and yet re dead accurate.

The Sensory model closely resembles th miliar Sturtevant Torque Wrench in ap ance. Here is the difference—whereas the St vant Torque Wrench depended solely on t reading to determine the applied torque, new Sturtevant Sensory model embodies other features—"sound" and "feel."

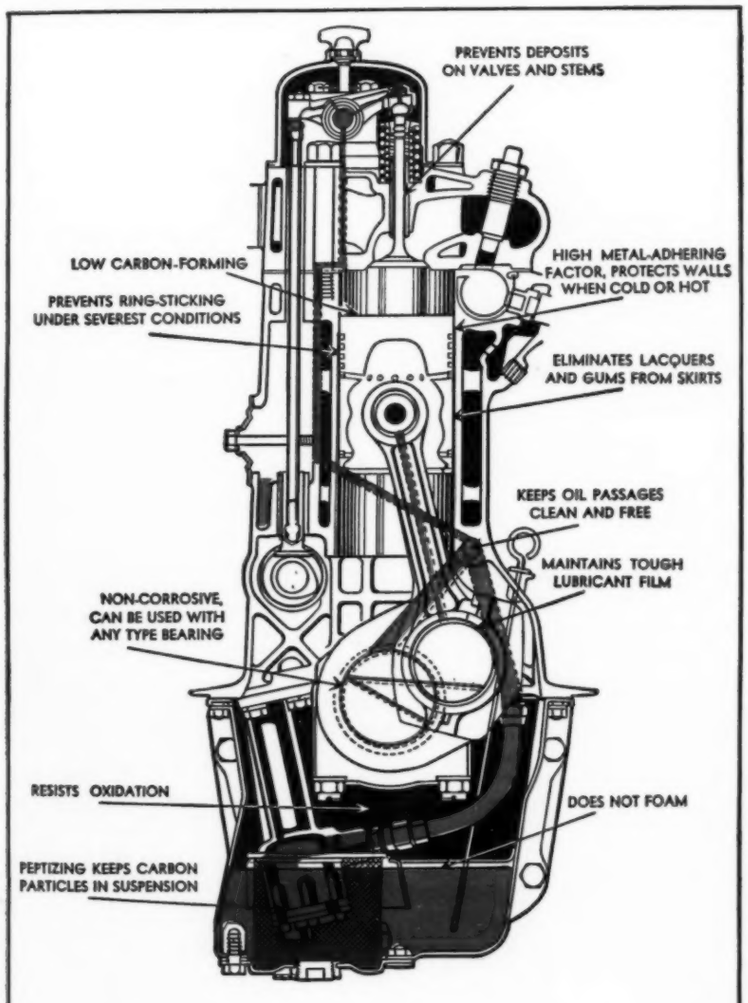
These Sensory features work as follows: A

TYPICAL DIESEL LUBRICATION PROBLEMS:

4. Removal of Deposits from Engines

RPM DELO will clean your engine of sludge and other deposits, even in the ring-belt, unless accumulations of carbon, gum, varnish, etc., have cemented rings so tightly that oil cannot get behind them. The following procedure is recommended for purging conventional engine systems:

1. Drain present oil from crankcase while hot.
2. Renew filter element to trap abrasive particles that may be carried in circulation during purging.
3. Fill crankcase with RPM DELO.
4. Run engine at fast idle for two hours, maintaining water jacket temperature of approximately 200° F. minimum.
5. Drain again while hot and refill with RPM DELO.
6. Place engine in regular service and drain at one-half normal drain period or 750 miles, whichever comes first, for two or three drains. Check oil frequently as removal of deposits may temporarily increase oil consumption.
7. Drain while hot. Check oil filter and replace when necessary.
8. Refill with RPM DELO, returning to regular oil drain and filter change period, and continue to use RPM DELO.



This diagram of a typical Diesel engine shows how RPM DELO keeps rings free and maintains clean operation.

RPM DELO is made from base oils especially selected for non-deposit-forming characteristics, and contains a detergent which keeps foreign particles in suspension. It also contains an anti-oxidant which prevents the formation of gums and lacquers. It is non-corrosive, may be used with any type of bearing.

RPM DELO has world-wide distribution and is marketed under the following names: RPM DELO, Caltex RPM DELO, Kyso RPM DELO, Signal RPM DELO, Sohio RPM DELO, and Imperial RPM DELO (Concentrate). Ask your Diesel engine manufacturer or distributor for the name of the RPM DELO supplier in your vicinity.

The typical cleanliness of engine parts when RPM DELO is used is illustrated by this oil filter removed from an engine used in heavy duty Diesel bus service for 50,000 miles. Oil pump screen and valve chamber were comparably clean.

RPM DELO

STANDARD OF CALIFORNIA

ger finger is provided which can be set at any desired signalling point. As torque is applied with the wrench, and at the exact instant the "set" torque is reached, the sensory action (1) Sounds a loud and distinct click and (2) imparts a definite strong impulse to the hand. Thus, through *three* senses, sight, sound *and* feeling, the operator automatically releases (by reflex action) his pull on the wrench (even before the conscious mind reports it) making torque both fast and dead accurate. Here, through three channels instead of just one, the operator is conscious that the release point is reached, in spite of himself.

Several of these Sensory models were tested on an engine builder's production line. Periodic checks proved that after 79 days, Sturtevant Sensory models were still dead accurate and never required re-setting.

A bulletin has been prepared and is available for distribution upon request to P. A. Sturtevant Co., Addison, Illinois.

Promotions Announced for Hendy Executives

PROMOTIONS for top-ranking executives of the Joshua Hendy Iron Works have been announced by Charles E. Moore, president, as he revealed that Capt. E. D. Almy, assistant general manager, will serve as manager for the Crocker-Wheeler division of the organization at Ampere, New Jersey.

Capt. E. D. Almy

A. J. M. Baker, Crocker-Wheeler manager, has resigned effective September 30, 1944, to become executive vice-president and general manager of the E. W. Bliss Company, with headquarters in New York.

Succeeding to Almy's post as assistant general manager in Sunnyvale is Harry C. Gunetti, who has served for more than three years as general superintendent. Robert Mann, former assistant general superintendent, becomes general superintendent, and Clifford Sayre, former night general superintendent, becomes assistant general superintendent.

New Line of Recirculating Clarifiers Announced

THE Briggs Clarifier Company, manufacturers of widely used Briggs Oil Clarifiers, have recently brought out a new standard line of Self-Contained Automatic Recirculating Clarifiers known as the DRU Series.

This new line is designed to solve a specific filtration problem. It is a completely self-contained unit with electrically operated pumps and heaters which operate independently of the engine or lubrication system and thus can be adapted to any engine no matter how difficult the system may be to fit. The DRU Series is especially suited for the lubrication system

Diesel, Gasoline or Natural Gas engines where operating temperatures are too low or pump capacities are inadequate for maximum filtration efficiency.

The DRU Series is composed of a standard By-Pass Clarifier, with dual rotary positive displacement pumps and electric heater installed in the base beneath the Clarifier. The motor and heater are interconnected on one electric circuit and the entire circuit is protected by an overload cutout. If pumps stop operating, the heater is cut off—positive protection against overheating the oil.

New One-Piece Hose Clamps

TINNERMAN Products, Inc. announce a new one-piece hose clamp using no gears, thumb screw or intricate locking means. The clamp may be snapped over the hose into pre-latched position by hand, as shown in left illustration, below. Final lock is made with hand pressure on ordinary pliers, as shown at right.

This new clamp has a lower profile, is lighter in weight, and exerts an even pressure around the entire circumference of the hose. The clamp may be quickly released for removal with an ordinary screw driver or other pointed tool. Being a one-piece clamp and using no threaded parts, it drastically reduces weight and assembly time. Made of S.A.E. 1060 spring steel with parkerize and zinc chromate primer finish. Available for all sizes of An and Ordnance specification hose in a wide range from ⅜" O.D. and up. Manufactured by Tinnerman Products, Inc., 2009 Fulton Road, Cleveland 13, Ohio.

Lister-Blackstone Offers Series of "Double Feature" Diesel Bulletins

A NEW series of "Double Feature" bulletins covering their latest Marine Diesel products, is announced by Lister-Blackstone, Inc.

This series is expected to be of special interest

to Shipyards, Naval Architects and Designers. In addition to giving descriptive data, they embody detailed scale drawings which may be placed beneath layout tracings to show exactly how the equipment fits into the engine-room

The bulletins cover latest design Marine Diesel Engines, compact Diesel Generator Sets and Combination Auxiliaries with Generator, Air Compressor and Bilge Pump. They may be obtained by writing to the manufacturer at 1706 So. 68th Street, Milwaukee, Wis.

Crocker-Wheeler Appoints Edgar C. Brandt Assistant to General Manager

APPOINTMENT of Edgar C. Brandt as Assistant to the General Manager of the Crocker-Wheeler Electric Manufacturing Company, Division of Joshua Hendy Iron Works has been announced by Mr. A. J. M. Baker, General Manager of the Crocker-Wheeler division. Prior to his connection with Crocker-Wheeler, Mr. Brandt was associated with the Elliott Company as Vice-President and General Manager, and with the Westinghouse Electric Manufactu Company in East Pittsburgh, Pennsylvania

Edgar C. Brandt

Maxim Silencer Wins 2nd Star

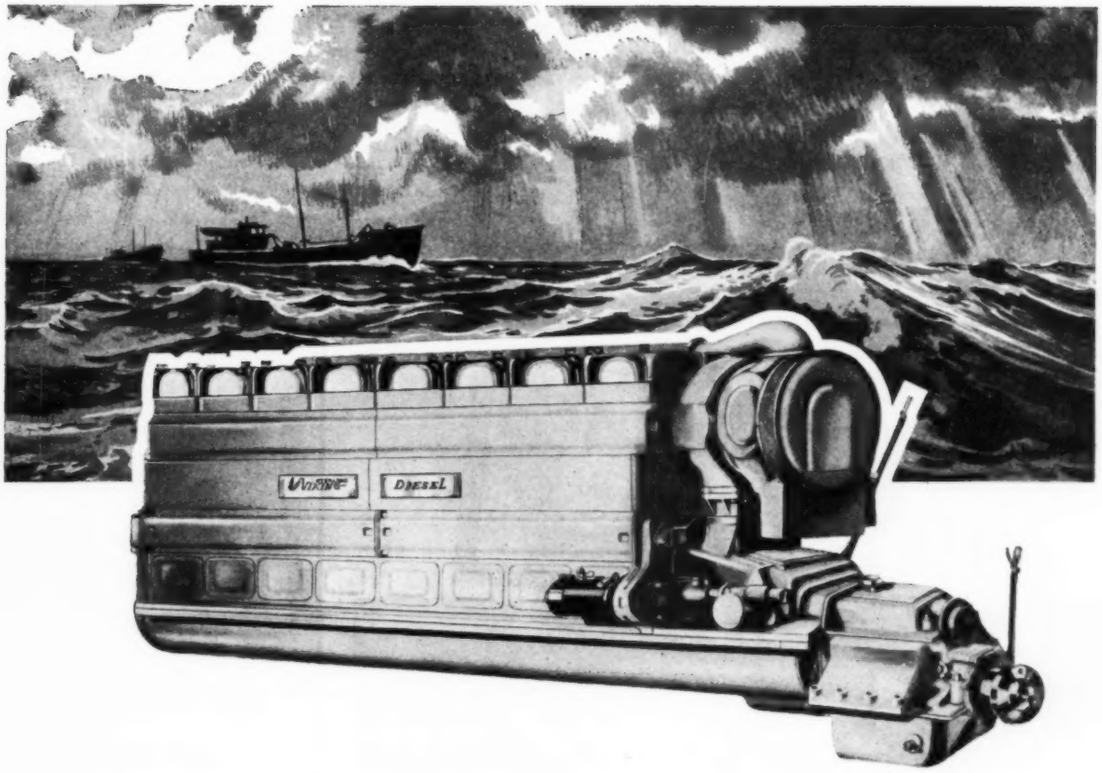
A SECOND star for their Army-Navy "E" P duction Award Burgee was recently received the Maxim Silencer Company. The award made by Lt. Commander R. W. Rose, USN

The original award was made in the middle 1943 and the first star added six months la Commenting on the award, Mr. H. H. Max President of the company, said, "A year ago people in our plant were very proud to rec the Army-Navy 'E' award in recognition of th war production efforts. We all realized, ho ever, that this was a challenge as well as a rec nition, and I am gratified that we have be able so far to meet that challenge. Now we concentrating on keeping it up."

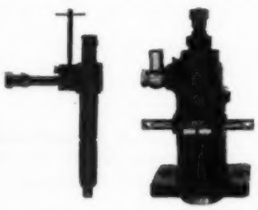
EMC Announces New Service Facilities

Heavy increase in the war demand for Ge eral Motors Diesel engines, General Motors comotive and Electro-Motive rail car spa parts from the United States Navy and Unit States railroads has made necessary a progra of Electro-Motive plant changes, C. R. born, General Manager, recently announc

"The enormous growth of the spare parts a service repair demands upon Electro-Motive h resulted in the development of a situation which seriously interferes with keeping



THE NEW STERLING "VIKING" DIESEL HAS BENDIX-SCINTILLA FUEL INJECTION EQUIPMENT



FUEL INJECTION PUMPS are available for a wide range of engines. NOZZLE HOLDER ASSEMBLIES are available in a variety of lengths, with replacement spray tips. Also, liquid-cooled units interchangeable with uncooled units.

The new Sterling "Viking" Diesel marks a new advance in design, in horsepower per pound, in compactness and in fuel economy.

That explains the choice of Bendix-Scintilla Fuel Injection Equipment. For Bendix-Scintilla Fuel Pumps and Nozzle Holder Assemblies are outstanding for their efficient, dependable, economical operation. They are precision-built with the ruggedness to withstand heavy-duty service. Their simple design (reducing maintenance and service to a minimum), rugged construction, and careful workmanship give unfailing dependability.

For further details on Bendix-Scintilla equipment, or for the answer to your fuel injection problems, write to the Scintilla Magneto Division.

SCINTILLA MAGNETO DIVISION
SIDNEY, N. Y.

THE INVISIBLE CREW
Precision Equipment by
Bendix Aviation Corporation

with the equally heavy demand for the production of engines and locomotives for war purposes," said Mr. Osborn.

"Some idea of the nature of the problem can be obtained from the figures on spare parts growth. In 1941 spare parts shipments of Electro-Motive averaged 790,000 pounds monthly. During March of this year it rose to 3,140,000 pounds. There is every indication that this rate will increase.

"The new facilities will permit separating the service repair and parts functions from the original manufacturing operations. This necessitates the provision of new factory space in which to locate service repair and parts operations. In working out the plan, it was found that higher wartime production also would be better served if transmission equipment fabrication and repair, and cafeterial facilities were better housed and locker provisions for all employees were made. It was found possible to eliminate the present overcrowded conditions by including these improvements in the program.

"Due to the war situation on some building materials it is probable that the program will not be completed until some time next spring but it will be pushed with all possible dispatch. Two new buildings, new roads and a new parking lot are included in the program, Mr. Osborn said. The new buildings include:

1. One to house Service Repair and Parts.
2. Another to house Transmission Division machine shop, Locker Room, Cafeteria, Receiving Inspection and Warehouse.

The new Service Repair and Parts building will include the most modern facilities for complete rebuilding of locomotives and all their sub-assemblies as well as production and storage of spare parts.

New Carbon Removing Tool

REMOVING the carbon from the air inlet ports of the GM 2 cycle Diesel engine is a matter of minutes with the new Stuart Carbon Removal Tool. A better, cleaner job is assured and in the case of a 6 cylinder engine, at least three and one-half hours are saved over the time required by the most favorable of the previous methods used.

The ports can be cleaned with the Stuart tool without removing the pistons or pulling the cylinder sleeves, bringing about an additional saving in time over some other methods.

Complete details and prices may be had by writing the manufacturer — Stuart Engineers Division, 3349 North Ashland Ave., Chicago 13, Ill.

American Merchant Marine Conference To Be Held In New York October 18, 19 and 20

THE Propeller Club of the United States and the American Merchant Marine Conference will hold their Eighteenth Annual Meeting October 18, 19 and 20 at the Waldorf-Astoria Hotel in New York. This promises to be one of the most important of these annual meetings ever held for problems of vital importance to the future of the American Marine Industry will be explored and discussed by recognized authorities in their respective fields. Panel discussion meetings will be held the first two days of the convention and general sessions will be held the third day, Friday, October 20, and, in the evening of the third day, the Annual American Merchant Marine Conference dinner will be held.

ppoint Alexis Diakoff as leo Diesel Engineer

LEXIS J. DIAKOFF has been appointed nsulting Engineer of the Diesel Engine De- rtment of the Schenectady plant of American comotive Company, L. B. Jackson, Director Engineering, Diesel Division, has announced. . Diakoff comes to American Locomotive mpany from the University of North Da- a where he was head of the Mechanical gineering Department.

Alexis J. Diakoff

rly in his career Mr. Diakoff was chief engi- er of the submarine "Burevestnik" of the ssian Black Sea Fleet. During this time the et was evacuated to North Africa. He was en put in charge of consultation and opera- n of Diesel and Gas Power plants in Tunisia d Algeria, North Africa. Later Mr. Diakoff s connected with the Diesel Department of e Rennault Works, located near Paris, France. this capacity he tested installations and was signing engineer of Diesel engines. During s period he worked with Professor Arschaou- on the latter's solid injection system. Mr. akoff also made a special study of internal mbustion engines at Ecole Arts et Metiers in ris. In 1923 Mr. Diakoff came to the United tes where he was associated with the Ford otor Company and later the Detroit Edison mpany as a designing engineer.

r. Diakoff is a graduate of the Moscow Insti- e of Techonology with a degree of Dipl. g. in Mechanical Engineering and of the niversity of Michigan with a B. S. degree in echanical Engineering.

R. L. Willis Appointed Sales Engineer for TOCCO

APPOINTMENT of R. L. Willis as a sales engineer of the TOCCO Process Induction Heating Division of The Ohio Crankshaft Company has just been announced by Wm. E. Benninghoff, TOCCO Manager. Though working out of the Chicago TOCCO office, Mr. Willis will have headquarters in Milwaukee, Wisconsin, thus increasing the TOCCO service facilities in this area.

Willis was formerly Assistant Manager of Sales of the Structural and Bar Division of The Weirton Steel Company. Prior to that he was connected with the Bethlehem Steel Corporation for 15 years.

Hairston New DeBothezat Atlanta Sales Manager

GUY E. HAIRSTON has been appointed manager of its Atlanta district sales territory according to an announcement by American Machine and Metals, Inc., East Moline, Illinois.

Guy E. Hairston

Mr. Hairston, a native of Tennessee, is a graduate of Vanderbilt University with a degree in mechanical engineering. He served as production engineer for Campbell and Dann Manufacturing Company of Tullahoma, Tennessee, and later as sales supervisor for Firestone Tire and Rubber Company. Subsequently, he was appointed district sales manager of American Radiator and Standard Sanitary Corporation in the southeastern area of the United States. Mr. Hairston is a veteran of World War I and a member of Georgia Engineering Society and various civic associations in Atlanta.

Headquarters of the Atlanta district office of American Machine and Metals, Inc., of which Mr. Hairston is manager, are located at 907 Candler Building in that city. The divisions of the company under his supervision include Troy Laundry Machinery, DeBothezat Fan, Tolhurst Centrifugal, and Riehle Testing Machine.

Maritime "M" to Sperry Marine Division

THE Marine Division of the Sperry Gyroscope Company in Brooklyn has been awarded the Maritime "M" for excellence in production, according to a telegram received today by F. S. Hodgman, Manager, Marine Division, from Admiral H. L. Vickery.

Admiral Vickery, Chairman of the U. S. Maritime Commission Board of Awards, said that "The Board in recognition of outstanding production and achievement has awarded Sperry's Marine Division the Maritime 'M' pennant, the Victory Fleet flag and Maritime Marine Badges for all Marine Division employees." Marine Division employees of the Sperry Gyroscope Company in Brooklyn number in excess of

5,000. Included among the precision controls and instruments manufactured by Sperry Gyroscope Company are Gyro Compasses and other marine equipment.

Two New Oil Filter Models Announced

THE Briggs Clarifier Company has recently added two more models to its extensive line.

Briggs Series G Clarifiers are relatively small capacity units primarily designed for Oil Filtration service on mobile, marine and light to medium duty stationary engines with a minimum flow capacity of 3 gpm. They are supplied with adjustable mounting brackets for direct attachment—usually to the side wall of the engine. These Clarifiers, like all Briggs Clarifiers, embody the features of refill interchangeability for the three different types of operation—Gasoline, Natural Gas, and Diesels using both straight mineral and special additive type oils. G Series Clarifiers are also suitable for many types of machine tool lubricating systems and hydraulic oil systems.

Briggs Series F Fuel Oil Clarifiers are designed for Diesel and gasoline engines consuming from 5 to 10 gallons per hour. The small compact design makes the Series F especially adaptable to mobile Diesels used in trucks, buses, tractors, drag lines, cranes and field pump units. The smaller model, F-5 has proven valuable for the filtration of fuel oil in domestic oil burners. The larger model, F-10, works efficiently with the systems of marine, stationary and portable power plants.

F. S. Hodgman Twenty-five Years With Sperry Gyro

F. S. Hodgman receives his 25-year diamond pin.

F. S. HODGMAN, USNR retired, manager of the Marine Division of the Sperry Gyroscope Company, receives a diamond pin marking the completion of 25 years with the company. A native of Nebraska, Hodgman joined the Sperry organization in 1919 as product engineer on the Marine Gyro-Compass, after serving aboard the USS Utah during World War I. Widely known for outstanding contributions in the development of the gyro-pilot for ships and aircraft, and automatic controls for merchant and naval vessels, Hodgman successively held the positions of product engineering manager, Nassau plant manager, and assistant chief engineer before his appointment last February as manager of Sperry's new Marine Division. In above photo, P. R. Bassett, left, vice president and general manager of Sperry Gyroscope Company, awards the 25-year emblem.

New Bulletin on Uniwinches

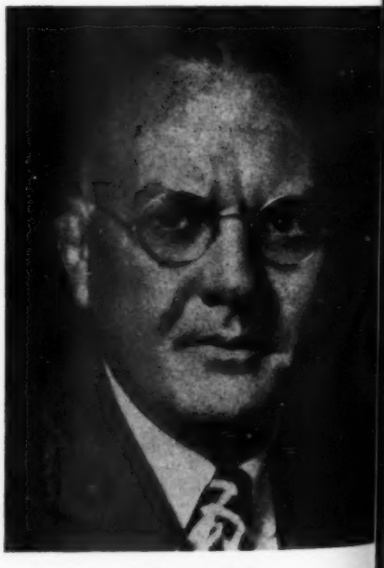
A 12-PAGE catalog, No. 441, has been published by the Lake Shore Engineering Company, Iron Mountain, Michigan, which describes the complete line of Uniwinches, both open and closed types, as well as the conventional

cargo winch. The bulletin includes brief specification data, illustrations of various types of winches, and a brief discussion of the company's part in the development of the Uniwinch for the Maritime Commission. Copies may be secured upon request to the manufacturer.

New Weatherhead Appointments

ELEVATION of three executives of The Weatherhead Company to vice presidencies and the appointment of a fourth to the post of assistant to the president, is announced by A. J. Weatherhead, Jr., president of the Cleveland, Ohio, firm.

H. Church is the newly appointed vice president in charge of sales; George H. Huffer becomes vice president in charge of engineering; and Robert P. Gibson will serve as vice president in charge of automotive sales for The Weatherhead Company. Morris H. Wright is the new assistant to the president.



H. B. Church

H. (Buck) Church, a native of Washington, D. C., is a graduate of Phillips Exeter Academy and of Yale University. A 1st Lieutenant in the American Air Force in World War I, he was previously connected with Burger Brothers of New Haven, Conn., as advertising and sales manager. A member of the Society of Automotive Engineers and of the Institute of Aeronautical Science, Church joined The Weatherhead Company in 1936 as sales engineer and later became the manager of the aviation sales division.

George H. Hufferd

George H. Hufferd was born in Mays, Indiana, and attended the University of Michigan. A former chief engineer of Thompson Products' Detroit Division and executive engineer of Houdaille-Hershey Corporation's Buffalo Division, he joined The Weatherhead Company as chief development engineer in 1943. Hufferd is a member of the Society of Automotive Engineers, the Institute of Aeronautical Engineers, and the Engineering Society of Detroit.

Robert P. Gibson

Robert P. Gibson, a native of Carrolton, Ohio, has been associated with The Weatherhead Company for 15 years. A former banker, Gibson is widely known as an industrial sales engineer. Prior to his appointment as vice president in charge of automotive sales, he was manager of the company's industrial sales division. A member of the Society of Automotive Engineers, Gibson will have new headquarters in Detroit at the company's branch office in the Fisher Building.

Morris H. Wright, born in Logan, Utah, holds the degree of Bachelor of Science from Utah State College and Master of Business Administration from Harvard University. Formerly connected with the National City Bank of Cleveland and the Buffalo Brake Beam Company, Wright came to Weatherhead from the Acme Steel & Malleable Company where he was assistant general manager.

Cleveland Graphite Bronze Announces Promotions

NORMAN A. STOCKER, Charles L. Smythe and Arthur E. Gibbs of the Service Engineering Department of The Cleveland Graphite Bronze

295 ENGINES *described . . . profusely illustrated*

Diesels for Universal Application
Alco Stationary Diesels
Alco Sulzer Diesels
Anderson Model RD
Atlas Imperial Diesels
Atlas Lanova Diesels
Baldwin Diesels
Buckeye Diesels
Buda-Lanova General Purpose Diesels
Busch-Sulzer Bros. Diesels
Caterpillar Automotive Diesels
Caterpillar Industrial Diesels
Caterpillar Marine Diesels
Chicago Pneumatic Diesels
Chrysler Diesels
Clark Bros. Diesels
Climax Models D 148 and D 297
Cooper-Bessemer Diesels
Cummins Diesels
Cummins Fuel Injection System
Dodge Lanova Diesel
Enterprise Standard & Supercharged Diesels
Fairbanks-Morse Diesels
Fulton Iron Works Co. Models RR, BGS and KS
General Motors Diesels
Gray Marine Diesels
Guiberson Radial Diesels
Hamilton Diesels
Joshua Hendy Series 30 Diesels
Hercules Automotive Diesels
Hill Model R. Diesels
Ingersoll-Rand Type "S"
International Tractor and Industrial Types
Kahlenberg Marine and Stationary Diesels
Kermath 4-cycle Marine Conversions
Lathrop Types D-30 and D-40
Lister-Blackstone Models CD and CE
Lorimer Slow Speed Heavy Duty Diesels
Mack-Lanova Trucks, Bus and Marine
Murphy Diesels
Nordberg Convertible Diesel-Gas Engines
Nordberg Supair Diesels
Palmer Bros. Type RND
Rathbun-Jones Diesel and Gas Engines
John Reiner Diesel Marine Auxiliary Units
Sheppard Models 6 and 7
Superior (National Supply Co.) Diesels
Union Marine and Stationary Diesels
United States Motors Diesel-Electric Plants
Venn-Severin Diesels
Washington Industrial and Marine Diesels
Waukesha Hesselman Industrial Type
Waukesha Multifuel Oil Engines
Witte Diesels and Diesel Electric Plants
Wolverine 2- and 4-cycle Diesels
Worthington Diesels

EQUIPMENT DESCRIBED

Adeco Fuel Injection Equipment
American Bosch Fuel Injection Equipment
Denco Fuel Injection Equipment
Bendix Scintilla Fuel Injection Equipment
Ex-Cell-O Fuel Injection Equipment
American Blower Hydraulic Couplings
Durabla Pump Valve Service
Diamond Chain Drives
Roots Connersville Supercharging Blowers
B-W, formerly McCulloch, Roots-Type Supercharger
Elliott (Buchi System) Turbochargers
Elliott Electromagnetic Slip Couplings

VOLUME 9

The Ninth Edition of the **DIESEL ENGINE CATALOG**, edited by Rex W. Wadman, is now available. This is not a reprint of previous volumes — the book has been completely revised and now contains descriptions and detailed specifications of over Two-Hundred and Ninety-five engines — profusely illustrated. Color is freely used to trace fuel, lube, and cooling systems. Nothing like it published. A large section is devoted to equipment associated with Diesel installation and operation and there is a directory of Diesel Engine and Accessory manufacturers. The most useful Diesel book available — widely used by those who specify and buy Diesels and equipment and by engineers in all fields of power application. An indispensable book for all who want to know Diesel engines and their applications.

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Company have been promoted to district sales engineers and have been assigned territories, W. Christenson, sales manager, announced today.

Stocker, who has been with the company since 1928, has headquarters in Milwaukee and is in charge of territory in Northern Illinois, Wisconsin, Minnesota and Iowa. Smythe, who joined Cleveland Graphite in 1942, will represent it in Eastern Ohio and Western Pennsylvania. Gibbs also came to the company in 1942 and has been assigned to Western Ohio, Indiana, Southern Illinois, Kentucky and Missouri.

Kennedy Valve Elects Leon H. Marsh

THE Board of Directors of The Kennedy Valve Mfg. Co. announces the election of Leon H. Marsh as Vice President and Sales Manager. Mr. Marsh has been associated with the company for more than 25 years. After having been Assistant Sales Manager for many years, he was made Acting Sales Manager in 1941, upon the death of Clarence H. Kennedy, who had been the company's Vice President and Sales Manager; and was promoted to the position of Sales Manager in 1942.

Mr. Marsh will be in charge of all sales and public relations of the company, which manufactures iron-body and bronze valves; malleable iron, bronze, and cast iron pipe fittings, fire hydrants, and various valve specialties.

40,000th Graymarine Diesel

Gray Marine Motor Company recently celebrated the testing and shipping of the 40,000th Graymarine Diesel. The engine shown is one of the high-output models for the U. S. Navy, standard equipment in the invasion craft which have carried the brunt of the inshore work in landing on foreign shores.

WEST COAST DIESEL NEWS

By JIM MEDFORD

THE Portland, Oregon, yard of the Albina Machine Works has completed several 174-ft. Navy tankers powered with 600 hp. Union Diesels with Cummins Diesel auxiliaries and Rogers Diesel generators.

AT Sausalito, California, Nunes Bros. are completing two 58-ft. trawlers each powered with 175 hp. Buda Diesels for Savario diGannario and Cosimo Volante.

HUMBOLT Bay Construction Co., Eureka, California, has installed a Caterpillar 115 hp. Diesel in Joe Balestrieri's 47-ft. dragger.

A. E. (DUKE) YOUNG, ex-Portland, Oregon, native and assistant sales manager for the Twin Disc Clutch Company, Racine, Wisconsin, recently visited Pacific Northwest area dealers.

ASTORIA Marine Construction Co., Astoria, Oregon, have under construction a pair 70-ft. draggers to be powered with 150 hp. Cummins

Diesels and using Twin Disc gears.

THE Anacorties, Oregon, yard of the Nor Pacific Shipbuilders have launched a new 70 combination dragger-seiner for Capt. Anto Haugland. Main engine is a 175 Atlas Dies

CAPT. John Joncich will command the ne family 81-ft. purse seiner now nearing compl tion at La Conner, Washington, by Sagstad a powered with a 250 hp. Atlas Diesel.

REBUILT and repowered with a new 150 h Fairbanks-Morse marine Diesel, the Campbe Brothers tug *Alasco IV* of Wrangell, Alaska, ready to leave Grandy Boat Co.'s yard at S attle, Washington, for her home port.

A NEW 72-foot all-welded steel seiner for a unannounced owner is to be built by McAllist of Oakland, California, with a 250 hp. Ati marine Diesel for main power and a Caterpill Diesel for generator service.

BUILT by the Reliable Welding Work Olympia, Washington, for service on the Ska River, the 52-ft. *Ruby III* will be powered wi a pair of General Motors 2-cycle, 165 hp. Dies with Gibson roller chain drives and Twin Di power takeoffs.

POWERED with two 240 hp., 6-cyl. Washin ton Diesels turning outside screws for ma propulsion and a 150 hp. Buda Diesel on cente line screw for cable-laying operations, the 15 ft. *Glassford* submarine cable craft has be completed for the Army Supply Division by th Seattle Shipbuilding & Drydock Co.

COLBERG of Stockton, California, has starte construction on two 87-ft. seiners each power with 400 hp. Atlas marine Diesels and Cate pillar Diesel auxiliaries for Nick Dragich an Garhas Brothers.

CHARLENE, 115-ft. and built by Martinolich of San Francisco for O. W. Warner and Jo Pancho, San Diego, California, is powered wi a Union 600 hp. marine Diesel, two Caterpill Diesels turning 75 kw. F-M generators and Caterpillar Diesel generator set.

RECENT Murphy Diesel installations in Bri ish Columbia fishing vessels include a 150 hp unit in the Johnson Fishing & Packing Co. 62-ft. packer *New Fraser;* 100 hp. in the B. C Packers' *Harrock;* and a 150 hp. in the same company's *China Hat.*

TWO recent Cummins Diesel installations in

West Coast fish boats by the Martinolich yard of San Francisco were 250 hp. engines in the *Admiral King* and the *J. A. Martinolich*.

THE Grandby Boat Co., Seattle, Washington, has completed the 74-ft. seiner *Shilkof* for the Apex Fish Co., Port Wakefield, Washington. Main engines are a pair General Motors 165-hp. Diesels with Twin Disc takeoffs and roller chain drive to single shaft.

AT Stockton, California, Colberg Brothers will complete a new 87-ft. purse seiner for Gargas & Co., of San Pedro. Main engine is a 400 Atlas marine Diesel with a 40 hp. Caterpillar Diesel as auxiliary.

CAMPBELL Machine at San Diego, California, is starting a new 115-ft. tuna clipper to be powered with a 840 hp. supercharged Union Diesel and two Union Diesels driving 125 kw. generating sets. Shafts are 7½-inch Monel.

THE Long Beach, California, yard of Hodgson-Greene-Haldeman will construct for Rebelo and Francisco a 118-ft. tuna clipper to be powered with a 525 hp. Enterprise Diesel and having Caterpillar Diesel auxiliaries and F-M pumps.

BY Colberg boatyard, Stockton, California, the 80-foot fisherman *Fisher Lassie* for Charlie Buchan has a 400 hp. Enterprise Diesel turning 400 rpm. and direct reversible.

A 400 hp. Atlas Imperial Diesel will go into the 87-foot purse seiner now under way at Colberg's yard for Nick Dragich of San Pedro. Auxiliary is a 40 hp. Caterpillar Diesel.

EAST Bay Shipbuilders, Oakland, California, are completing an all-welded steel whale killer boat of 160 tons for Dick DePolo. Engine is a 250 hp. Enterprise Diesel with Maxim silencer. A 60 hp. Caterpillar Diesel is auxiliary.

THE Martinolich yard at San Francisco, California, have installed a 250 hp. Cummins marine Diesel with Twin Disc gears in the 70-foot dragger building for Victor Cardinalli.

OCEAN QUEEN, a 53-foot combination fish boat, has been repowered by its owner, Dominic Tribgali, with a new 115 hp. Caterpillar marine Diesel at San Francisco, California.

CONVERTED from a tuna clipper to a purse seiner, the 70-foot *City of Naples* has been repowered by Campbell at San Diego, California, with two 60 hp. Caterpillar Diesel auxiliaries.

THE Vancouver, B. C., yard of Menchions, Ltd., is being used by Todd and Sons to build their new 78-foot seiner-packer with 200 hp. Atlas marine engine.

Briggs Clarifier Announces Appointment of New Zone Managers and Distributors

THE Briggs Clarifier Company is expanding and strengthening its industrial distribution organization to better serve the increasing demand for Briggs Oil Clarifiers. To this end, the following Zone Managers and Distributors have been appointed:

Mr. Thomas W. McKinley, who has been with the Company since August, 1941, in the capacity of Service Engineer, has been appointed Southeastern Zone Manager, covering all states south of Maryland and east of West Virginia, Tennessee and Mississippi. He will make his headquarters in Atlanta, Georgia, at 2400 Boulevard Drive, N. E.

Mr. Donn Murphy has been appointed South-

western Zone Manager, covering Texas, Oklahoma, Kansas, Missouri, Arkansas, and Louisiana, with headquarters in Dallas, Texas. Prior to his appointment, Mr. Murphy was actively engaged in industrial sales work as a member of the firm of M & M Industrial Supplies, Dallas.

Mr. A. H. Martin has been appointed Western Zone Manager, with headquarters at 1556 Filbert Street, San Francisco 3, California. Prior to his appointment, Mr. Martin worked for three years with western distributors as Sales and Service Engineer for the Company.

New Distributor Appointments

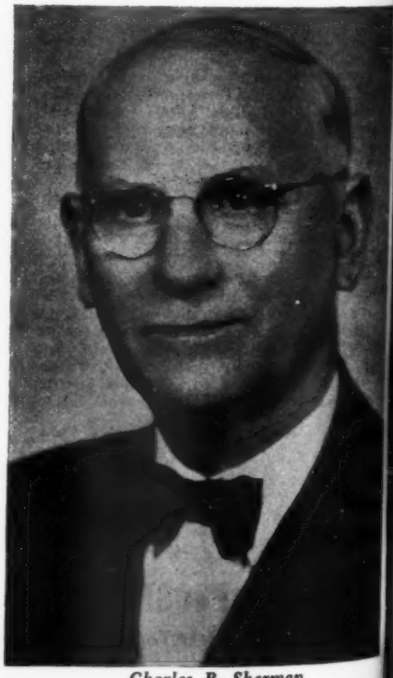
W. P. Childs Machinery Company, 845 Memorial Drive, S.E., Atlanta, Georgia, for western Tennessee and north and central Georgia.

Pate Supply Company, 2215 First Avenue, South, Birmingham, Alabama, for the state of Alabama.

Sullivan-Mears Company, 215 Pershing Road, Kansas City, Missouri for the states of Kansas and Missouri.

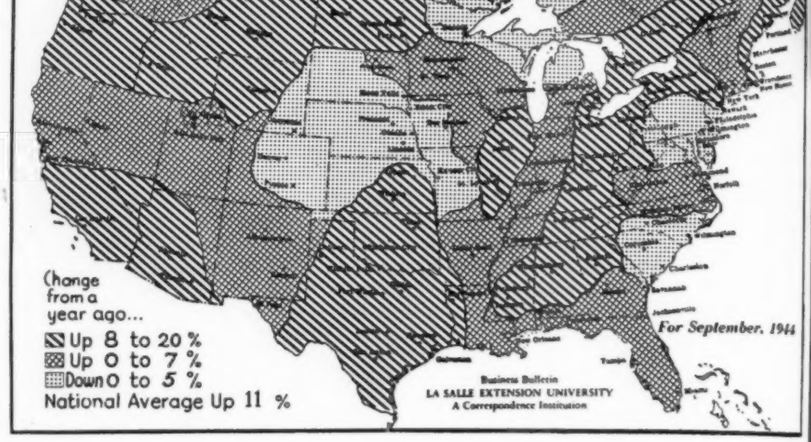
Superior Engine Division Opens New Office With C. B. Sherman in Charge

THE Superior Engine Division of the National Supply Company has announced the opening of a new sales office at Ames, Iowa, and the appointment of Charles B. Sherman, as district manager.



Charles B. Sherman

LaSalle Map of Business Conditions



Business Activity Continues at a High Rate

Map Supplied by BUSINESS BULLETIN DIVISION of La Salle

The volume of trade and activity in most branches of industrial production are still being maintained at levels considerably above those of last year. At the beginning of the fall months, business is very close to the highest rate that has ever been achieved. National income is holding steady in spite of some significant signs of slackening which have appeared in several lines. The total volume of business, as measured by bank transactions, is 11 per cent higher than it was a year ago.

While the general average is high, conditions are becoming more spotty and variations among different areas are greater than they have been at any time in the last four years. Many shifts are going on in war production and in quite a number of places the shift back to civilian products is being gradually speeded up. That trend will probably become even more significant during the next few months. Adverse weather conditions for growing crops have also affected business in some sections.

Gains over a year ago are greatest in three regions: the Southwest, especially in Texas; the Southeast, around Birmingham; and the territory around New York City. Some of this relatively better showing in these districts is due to the fact that activity in them a year ago was lagging slightly behind the average for the entire country. Further increases are likely to be somewhat smaller.

In the New England states and in the Middle Atlantic region the gains over last year are quite a little smaller than the national average. In several communities business is lower than it was a year ago. Many war contracts have been completed and others have been cancelled without being fully replaced by new ones. As a result employment and pay rolls have declined and these reductions are quickly reflected in reduced business activity throughout the district.

Business is holding up quite well throughout the South but in most of that section of the country the gains over last year have been a little less than the national average. Agricultural conditions are fairly favorable, although the cotton crop is expected to be less than average. Spending in connection with the military camps is not increasing as it was in previous years. These factors tend to hold down business gains in these states.

In the agricultural sections of the Middle West business has also been lagging behind slightly, but in most places it is better than it was a year ago. Crop prospects are good, although they have been reduced by the dry, hot weather. Whenever the farm outlook becomes more uncertain than usual, farmers are likely to reduce their purchases until they can ascertain the size of their crops. Weather conditions during the remainder of the season will determine the extent of the rise in business volume during the next few months.

Along the west coast both trade and industry have been maintained at high levels and in most places the advance has been greater than the national average. The biggest gains have been in the southern half of the Pacific Coast states where war production, especially aircraft and shipbuilding, is still at the peak. In the northern half the advance has been about the same as the national average.

In Canada, the trends in industry, trade, and agriculture have been about the same as they have been in the United States. The output of factories is about 10 per cent higher than last year and business volume continues to expand gradually. Agricultural prospects in most sections of the country are quite favorable and total farm output may be close to a new peak. Large pay rolls in manufacturing, high farm income, and spending for war materials will keep business activity at high levels during the next few months.

Mr. Sherman received his education in mechanical engineering at Iowa State College, and was for many years engaged as a contractor in building municipal power plants and waterworks systems. Following this, he became Western district manager for the H. Channon Company, Chicago. For the next ten years, he was head of the Iowa State sales office of Electric Machinery Manufacturing Company, Minneapolis, manufacturers of large synchronous motors and generators for Diesel and steam engines.

Since 1941, Mr. Sherman has been chief expediter for the Busch-Sulzer Bros. Diesel Engine Company, St. Louis. The new district offices will be located at 315 Main St., P. O. Box 324, Ames, Iowa.

Latest Diesel Patents

A description of the outstanding patented inventions on Diesel and Diesel accessories as they are granted by the United States Patent Office. This information will be found a handy reference for inventors, engineers, designers and production men in establishing the dates of record, as well as describing the important Diesel inventions.

Conducted by C. CALVERT HINES

2,317,968

COMPRESSION IGNITION MOTOR FUEL

Thomas H. Schultz, Richmond, and Irving E. Levine and Homer B. Wellman, Berkeley, Calif., assignors to Standard Oil Company of California, San Francisco, Calif., a corporation of Delaware

No Drawing. Application May 12, 1941, Serial No. 393,076

9 Claims. (Cl. 196—142)

1. A process of preparing an improved Diesel type motor fuel containing substantial proportions of chemically combined reactive oxygen, which chemically combined reactive oxygen is directly measurable in terms of oxygen factor of the said fuel, comprising subjecting a petrole-

um distillate relatively free from asphaltic and resinous materials and from large proportions of aromatic ring hydrocarbons and of higher than kerosene volatility to treatment in liquid phase with an oxygen-containing gas at a temperature 275-310° F. for a period of time sufficient to produce an oil having an oxygen factor of higher than about 800 but insufficient to increase the neutralization number of the oil by more than about 20, arresting the said treatment before the oxygen factor of the produced oil decreases to below about 800, and removing acidic reaction products without reducing the oxygen factor of the produced substantially acid-free oil to below about 800.

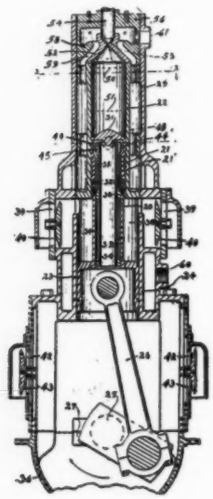
2,310,643

SUPERCHARGED, COMPRESSION-IGNITION, INTERNAL COMBUSTION ENGINE

Francis Marburg, St. Petersburg, Fla.

Application June 7, 1941, Serial No. 397,087

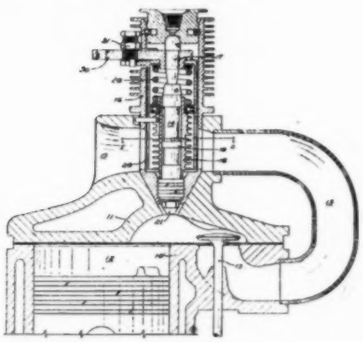
44 Claims. (Cl. 123—71)



1. An internal combustion power unit of the supercharged compression-ignition type having a power cylinder, a cylinder head and a piston, the power unit having an automatically controlled air-inlet port for purposes of scavenging and internally air-cooling and supercharging with substantially pure air, the power unit having a fuel inlet port terminating into the compression chamber, the power unit having a power piston controlled outlet port for combustion products, axially outer portions of said piston serving as a power piston containing piston rings sliding snugly within said power cylinder, axially inner portions of said piston

being of greater diameter than said power piston and having a wrist pin and serving as a cylindrical crosshead, a cylindrical guide for said crosshead, said guide being connected with said power cylinder and arranged coaxially with and axially inwardly therefrom, a crankcase having a cooling-gas port communicating therewith, a crankshaft and a crankshaft bearing, a connecting rod driven by said crosshead and driving said crankshaft, the piston stroke being twice as great, more or less, as the power piston diameter, said guide and said crosshead absorbing the side-thrust caused by said connecting rod and acting as a cooling-gas pump, axially middle portions of said piston and the internal cylindrical surfaces of axially inner portions of said power cylinder and of axially outer portions of said guide and the axially outer surface of said crosshead and the axially inner surface of said power cylinder, together, forming a cooling-gas passage, the power unit having a second cooling-gas port, said latter port communicating with said cooling-gas passage, said piston being hollow except at its top, the wall of said piston being perforated adjacent to said power piston, at least one of the said cooling-gas ports being automatically controlled, the arrangement being such that the cooling-gas port communicating with said passage, the said passage, the said perforation, the hollow within said piston, the crankcase and the cooling-gas port communcating therewith, together, are forming a group and are in series and in communication with each other during at least half of a piston stroke, the said cooling-gas-control causing a considerably greater amount of cooling-gas to flow through said group in one direction than in the opposite direction during the reciprocating action of said piston.

2,322,606
INTERNAL COMBUSTION ENGINE
Earl M. Ward, Los Angeles, Calif., assignor of twenty-five per cent to George C. Sullivan, Hollywood, Calif.
Application September 3, 1940, Serial No. 355,172
4 Claims. (Cl. 123—32)



1. In combination with an internal combustion engine, a combustion chamber, an air intake passage, an adjustable fuel injecting device disposed within the air intake passage, said device being actuated by the compression pressure in the combustion chamber, and a control means comprising a sleeve valve means surrounding said fuel injecting device arranged and constructed to regulate the quantity and direction of the intake air whereby the timing and cooling of the injecting device will be controlled.

ADVERTISERS' INDEX